

**2021-2022**

**This booklet contains  
tests for**

Art (grades 4-6)  
Calculator Applications (grades 6-8)  
Chess Puzzle (grades 2-8)  
Creative Writing (grade 2)  
Dictionary Skills (grades 5-6)  
Listening Skills (grades 5-6)  
Maps, Graphs & Charts (grades 5-6)  
Mathematics (grades 6-8)  
Number Sense (grades 4-6)  
Ready Writing (grades 3-6)  
Science (now grades 6-8)  
Social Studies (grades 5-6)  
Storytelling (grades 2-3)

**Duplicate materials as needed.  
For contest rules, refer to the  
A+ Handbook or UIL website.**

**ELEMENTARY ACADEMIC  
STUDY MATERIALS BOOKLET**

[www.uiltexas.org/aplus](http://www.uiltexas.org/aplus)



UNIVERSITY INTERSCHOLASTIC LEAGUE

\* Updated answer sheets  
for applicable events and  
updated Ready Writing  
evaluation are included.

CONTESTANT NUMBER:

**NOTE:** Contestants are required to list only the artist's last name (as it appears on the Official List) for Part A. However, there is **no penalty** if contestants also list the artist's first name. Scoring is based on correctness of the artist's last name and the title of the work.

**FOR GRADER USE ONLY**  
Score Test Below:

\_\_\_\_\_ out of 60. Initials \_\_\_\_\_

\_\_\_\_\_ out of 60. Initials \_\_\_\_\_

Papers contending to place:

\_\_\_\_\_ out of 60. Initials \_\_\_\_\_

*\*To calculate final score, add Part A and Part B together.*



University Interscholastic League  
A+ Art Contest Part A • Answer Sheet

*Write your contestant number in the upper right corner, and circle your grade below.*

Circle Grade Level:      4      5      6      7      8

**ARTIST**

**PAINTING**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

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**CONTESTANT NUMBER:**

**FOR GRADER USE ONLY**

Score Test Below:

\_\_\_\_\_ out of 60. Initials \_\_\_\_\_

\_\_\_\_\_ out of 60. Initials \_\_\_\_\_

**Papers contending to place:**

\_\_\_\_\_ out of 60. Initials \_\_\_\_\_

*\*To calculate final score, add Part A and Part B together.*



**University Interscholastic League  
A+ Art Contest Part B • Answer Sheet**

*Write your contestant number in the upper right corner, and circle your grade below.*

**Circle Grade Level:**

**4      5      6      7      8**

Art Elements

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. True      False

11. True      False

12. True      False

13. True      False

14. True      False

15. True      False

Art History

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_

21. \_\_\_\_\_

22. \_\_\_\_\_

23. \_\_\_\_\_

24. \_\_\_\_\_

25. True      False

26. True      False

27. True      False

28. True      False

29. True      False

30. True      False

**2021-2023 Art Study Test 1 - Grades 4-6**  
**Art Elements**

1. In which of these paintings is a red gown used to help focus our attention on a female figure in the painting?
  - a. *Three Maries at the Tomb*
  - b. *The Small Cowper Madonna*
  - c. *Woman with a Parasol - Madame Monet and Her Son*
  - d. *Queen Henrietta Maria with Sir Jeffrey Hudson*
  
2. In Cézanne's *Still Life with Milk Jug and Fruit*, the artist uses color
  - a. to make objects look three-dimensional on the two-dimensional canvas.
  - b. to separate the foreground from the background of the painting.
  - c. to make the grapes stand out against the apples.
  - d. to make the background lighter than the foreground of the painting.
  
3. The position from which a viewer sees objects in a painting is called \_\_\_\_\_.
  
4. Which of these pictures is painted on a sheet of copper?
  - a. *Estuary at Day's End*
  - b. *A Dutch Courtyard*
  - c. *River Landscape*
  - d. *A Pastoral Concert*
  
5. What kind of lines in *Estuary at Day's End* help create the sense of peacefulness and calm we feel when we look at the painting?
  - a. vertical
  - b. horizontal
  - c. diagonal
  - d. curved
  
6. In *Portrait of Michol (Miguel Pol?)*, the \_\_\_\_\_ represents eternal life.
  
7. The artist arranged the composition of *Still Life with Vegetables* using a
  - a. triangle shape.
  - b. diagonal line.
  - c. graceful curve.
  - d. none of the above.



8. The dark, gloomy look of the sky and sea in *Ariadne Abandoned by Theseus*
- shows the weather of the Greek Islands.
  - is copied from ancient wall paintings.
  - are used to show the sorrow Ariadne is feeling.
  - hides Theseus' ship as it sails away.
9. *Pink Cyclamen* was created with \_\_\_\_\_ paints.

### **True/False**

10. In *The Quiver Maker*, the quiver maker looks out toward the viewer.
11. Repeating curving lines in a painting can create a lively feeling.
12. Geometric shapes are more important than realistic detail in the composition of *Expectation*.
13. The vegetables in *Still Life with Vegetables* are in a wooden basket on the table.
14. The artist used realistic hand gestures in *Three Maries at the Tomb* to help show the surprise the women felt at the angel's news.
15. Red and blue are complementary colors.

### **Art History Section**

16. Juan Carreño de Miranda was official painter to the queen and king of \_\_\_\_\_.
17. Fra Angelico was both a painter and also a
- tapestry designer.
  - monk.
  - soldier.
  - keeper of the papal seals.
18. Common characteristics of the Fauvist style include
- bright, non-natural colors.
  - rough, broken brushstrokes.
  - simplified, flattened forms.
  - all of the above
19. Two World Wars occurred during the \_\_\_\_\_ period of art history.

20. The artist whose style of landscape painting directly contributed to the creation of the Cubist style of painting is
- Derain.
  - Cézanne.
  - Brown.
  - Durand.
21. Reynolds painted in a style known as
- Impressionism.
  - Fauvism.
  - Neoclassicism.
  - Pointillism.
22. *Rainy Midnight* is an image of a wet night in
- New York.
  - Venice.
  - Taos.
  - Paris.
23. *A Pastoral Concert* was painted in a style called \_\_\_\_\_.
24. The Impressionist style of painting developed in
- the United States.
  - Italy.
  - the Netherlands.
  - France.

### **True/False**

25. *The Madonna of Humility* was created during the Baroque period of art history.
26. The artist known as Jacopo Empoli was originally named Jacopo Chimenti.
27. Gericault had cavalry officers pose for the figures in *Mounted Trumpeters of Napoleon's Imperial Guard*.
28. Abraham van Beyeren's work as a painter made him a wealthy man.
29. The Romantic style of painting developed earlier than the Cubist style did.
30. Raphael is considered one of the greatest artists of the Italian Renaissance.

**2021-2023 Art Study Test 1 - Grades 4-6  
(Part B)**

**Answer Key**

<b>Elements</b>	<b>History</b>
1. b (25)	16. Spain (34)
2. a (50)	17. b (22)
3. point of view (11)	18. d (51)
4. c (29)	19. Contemporary (49)
5. b (31)	20. b (50)
6. pomegranate (34)	21. c (39)
7. a (41)	22. a (48)
8. c (38)	23. Rococo (35)
9. watercolor (43)	24. d (10)
10. F (53)	25. F (22)
11. T (19)	26. T (27)
12. T (55)	27. F (40)
13. F (41)	28. F (32)
14. T (27)	29. T (36)
15. F (11)	30. T (25)

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Numbers in parentheses are page numbers where answers can be found in the *Art Smart Bulletin* for 2021-2022 and 2022-2023. Correct spelling is not required for short answers.

**2021-2023 Art Study Test 2 - Grades 4-6**  
**Art Elements**

1. An artist might choose to create a very large painting to
  - a. fit a large public building.
  - b. strengthen the work's impact on viewers.
  - c. show that the subject is important.
  - d. all of the above
  
2. *The Madonna of Humility* was created with
  - a. oils.
  - b. pastels.
  - c. tempera.
  - d. watercolors.
  
3. The contrast between light and dark in *Three Maries at the Tomb* helps create a \_\_\_\_\_ mood.
  
4. To tie different parts of the composition of *Pink Cyclamen* together, the artist used the
  - a. blooms.
  - b. plant leaves.
  - c. flowerpot.
  - d. plant stems.
  
5. To help show perspective and separate the foreground from the background in *A Pastoral Concert*, the artist used \_\_\_\_\_ colors in the foreground.
  
6. In which of these paintings does the sky take up most of the canvas?
  - a. *Oarsmen at Chatou*
  - b. *Estuary at Day's End*
  - c. *Mountains at Collioure*
  - d. *Saint George and the Dragon*
  
7. The style of the mother's dress in *Portrait of Mrs. Jelf Powis and Her Daughter* is intended
  - a. to remind viewers of clothing from ancient Rome.
  - b. to keep the portrait individual.
  - c. to accurately show the fashions of her time.
  - d. to help blend her figure into the background.
  
8. The way something feels when you touch it is called \_\_\_\_\_.

9. What kind of expression does the woman have on her face in *Portrait of an Old Woman*?
- happy
  - thoughtful
  - sad
  - excited

### True/False

10. In *Rainy Midnight*, the streetlights and reflections are painted with white, yellow, and red.
11. It is hard for artists to make changes as they work on oil paintings because oils dry quickly.
12. The full-length pose of the queen in *Queen Henrietta Maria with Sir Jeffrey Hudson* makes us feel close to the queen.
13. In *New York at Night*, buildings are shown from more than one point of view at the same time.
14. In Cézanne's *Still Life with Milk Jug and Fruit*, the plate and the pitcher are formed with the same colors.
15. Cool colors seem closer to viewers than warm ones do.

### Art History Section

16. Which of these events occurred during the Baroque period?
- invention of television
  - development of oil paints
  - Isaac Newton's scientific discoveries
  - invention of the printing press
17. Experts believe that the artist used a magnifying glass to paint
- River Landscape*.
  - A Pastoral Concert*.
  - Saint George and the Dragon*.
  - Queen Henrietta Maria with Sir Jeffrey Hudson*.
18. The family of Juan Carreño de Miranda
- was part of the Spanish nobility.
  - was a main source of inspiration for his work.
  - ran a successful bank.
  - included several still life painters.

19. The Romantic style of painting developed in the \_\_\_\_\_ period of art history.
20. James Peale received his art training from
- his father.
  - his brother.
  - his nephew.
  - no one.
21. One other artist who was close friends with Kauffmann was \_\_\_\_\_.
22. *Oarsmen at Chatou*
- was painted very late in the artist's career.
  - is an example of an Impressionist painting.
  - was painted during the Baroque period of art history.
  - is a portrait painting of the artist's friends.
23. Brueghel
- was the least successful of all the artists in his family.
  - was known as "Jewel Brueghel" because his paintings were like beautiful jewels.
  - painted during the Contemporary period of art history.
  - was famous both as a landscape artist and as a still life artist.
24. *Expectation* is created in a style of painting called \_\_\_\_\_.

### **True/False**

25. Couse is best known for painting Native Americans in dramatic action scenes.
26. The Renaissance art history period is named for a rebirth of interest in classical learning which took place at that time.
27. *A Roemer with Grapes, a Pewter Plate, and a Roll* is an example of the kind of painting that the Dutch called "breakfast pieces."
28. The Fauvist style got its name from a French word meaning wild beasts.
29. De Vlieger spent 17 years in London, where he became very popular with English art collectors.
30. The Rococo style of painting developed earlier than the Romantic style did.

**2021-2023 Art Study Test 2 - Grades 4-6  
(Part B)**

**Answer Key**

<b>Elements</b>			<b>History</b>		
1.	d	(15)	16.	c	(28)
2.	c	(22)	17.	c	(23)
3.	dramatic	(27)	18.	a	(34)
4.	d	(43)	19.	Modern	(12, 36)
5.	warm	(35)	20.	b	(41)
6.	b	(31)	21.	Reynolds	(38)
7.	a	(39)	22.	b	(45)
8.	texture	(12)	23.	d	(29)
9.	b	(24)	24.	abstract	(55)
10.	T	(48)	25.	F	(53)
11.	F	(20)	26.	T	(20)
12.	F	(30)	27.	T	(32)
13.	T	(52)	28.	T	(49)
14.	T	(50)	29.	F	(31)
15.	F	(16)	30.	T	(28, 36)

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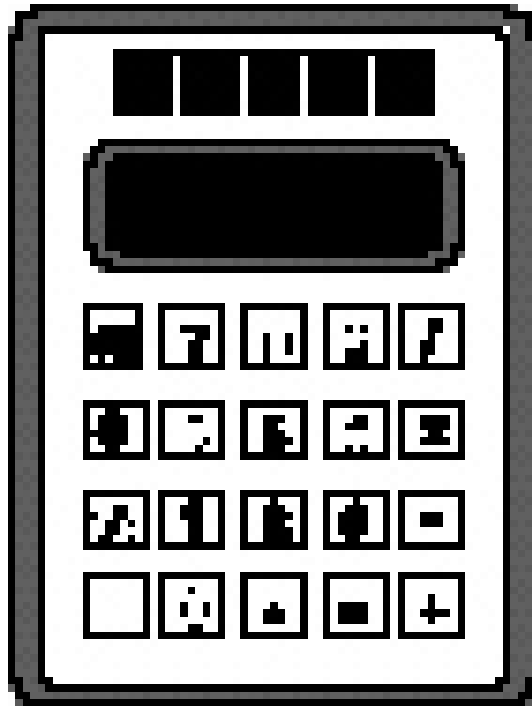
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**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Calculator Applications

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**



## 2021 UIL MS Calculator Test A

21A-1.  $-8.9 + 8.42$  ----- 1= \_\_\_\_\_

21A-2.  $3 + 7.69 + 4$  ----- 2= \_\_\_\_\_

21A-3.  $-308 + 118 + 156$  ----- 3= \_\_\_\_\_

21A-4.  $22 - 22 - 15 + 20$  ----- 4= \_\_\_\_\_

21A-5.  $444 + 548 + 115 + 130$  ----- 5= \_\_\_\_\_

21A-6.  $57 - 364 - 244 - 357 + 531$  ----- 6= \_\_\_\_\_

21A-7.  $0.385 + 0.715 + \pi + 0.283 + 0.492$  ----- 7= \_\_\_\_\_

21A-8.  $1.66 - 1.65 + 1.21 - \pi - 4.31$  ----- 8= \_\_\_\_\_

21A-9.  $206 \times 71.8 \times 586$  ----- 9= \_\_\_\_\_

21A-10.  $378 \times 85.9 \times 886 \times 136$  ----- 10= \_\_\_\_\_

21A-11. What is the quotient of two pi and 17.8 if the answer is greater than the integer one? ----- 11= \_\_\_\_\_

21A-12. Genny found 18 coins in her purse when she decided to clean it out. If there were 5 nickels, 7 quarters, 2 dimes and the rest of the change in pennies, how much money in change did she have? ----- 12= \$ \_\_\_\_\_

21A-13. How many minutes are in 14 hours? ----- 13= \_\_\_\_\_ min(integer)

21A-14.  $80/[76 \times 49 \times 143]$  ----- 14= \_\_\_\_\_

21A-15.  $(119)[113 \times 248 \times 207]$  ----- 15= \_\_\_\_\_

21A-16.  $\{(310)(117 - 311)(291)\} - 1.43 \times 10^7$  ----- 16= \_\_\_\_\_

21A-17.  $\{-183/153\} \left[ \frac{216}{266 + 56} \right]$  ----- 17= \_\_\_\_\_

21A-18.  $\left[ \frac{(0.00585 + 0.00392)}{171/19} \right] \left[ \frac{0.14}{3.96} \right]$  ----- 18= \_\_\_\_\_

21A-19.  $\frac{(221/446) + (642/200)}{(0.0259 - 0.0334)}$  ----- 19= \_\_\_\_\_

21A-20.  $\frac{(779)(5.4)}{0.0471} (3480 - 1040)$  ----- 20= \_\_\_\_\_

21A-21.  $(0.117)[28/53 \times 27/63] - 0.0108$  ----- 21= \_\_\_\_\_

21A-22.  $\frac{(\pi)(161/47)(89/137)}{(117/116)}$  ----- 22= \_\_\_\_\_

21A-23.  $\frac{(0.253 + 0.132 - 0.321)}{\{(408 - 677)/(0.739)\}}$  ----- 23= \_\_\_\_\_

21A-24. A concrete-rectangular sidewalk is 6' wide, 4" thick and one half mile long. How much concrete is in this sidewalk? ----- 24= \_\_\_\_\_ yds<sup>3</sup>

21A-25. Noah has 12 different crayons, 6 different colored pencils and 3 different colored ink pens. How many different combinations of a crayon, an ink pen and a colored pencil does Noah have? ----- 25= \_\_\_\_\_ integer

21A-26. Wesley spins a rubber stopper attached to a 3' long string around his head so that the stopper spins once around every quarter of a second. What is the speed of the stopper? ----- 26= \_\_\_\_\_ ft/s

21A-27.  $(21.5)[[5.93/(4.19)][0.0056/(0.00309)]]$  ----- 27= \_\_\_\_\_

21A-28.  $[1100 - (707 + 213)] + [(\pi)(725 - 701)]$  ----- 28= \_\_\_\_\_

21A-29.  $\frac{(1.53 \times 10^{11}) + (6.16 \times 10^{10})}{(-0.147)(0.561) - 0.0531}$  ----- 29= \_\_\_\_\_

21A-30.  $(8.8)[(5.77 \times 10^{10}) - (3.99 \times 10^{10})]$  ----- 30= \_\_\_\_\_

21A-31.  $(2.49)\left[\frac{120}{(2.15 \times 10^9)}\right]$  ----- 31= \_\_\_\_\_

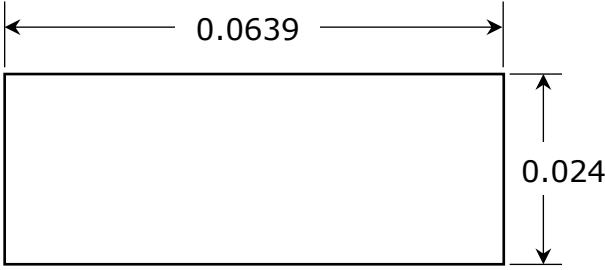
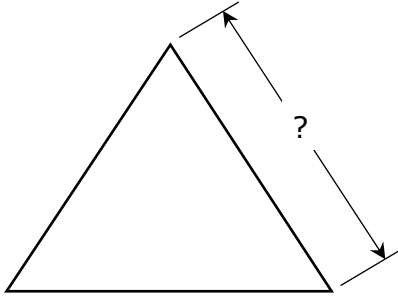
21A-32.  $\frac{1}{-0.347} + \frac{1}{(\pi)(2.33 - 2.63)}$  ----- 32= \_\_\_\_\_

21A-33.  $\left[\frac{1/239}{1/176}\right] + [0.381]$  ----- 33= \_\_\_\_\_

21A-34.  $\left[\frac{1/890}{1/1860}\right][2.70 \times 10^6]$  ----- 34= \_\_\_\_\_

21A-35. If there are 52 cards in a standard deck of playing cards what is the probability of drawing a queen of spades with one draw? ----- 35= \_\_\_\_\_

21A-36. If there are 2.54 centimeters in one inch, how many millimeters (mm) are in one yard?----- 36= \_\_\_\_\_ mm

<p>21A-37.</p> <p style="text-align: center;">RECTANGLE</p>  <p style="text-align: center;">Perimeter = ?</p> <p>21A-37 = _____</p>	<p>21A-38.</p> <p style="text-align: center;">EQUILATERAL TRIANGLE</p>  <p style="text-align: center;">Perimeter = <math>8.21 \times 10^{-7}</math></p> <p>21A-38 = _____</p>
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21A-39.  $\left[\frac{851}{879}\right](202 + 429)^2$  ----- 39= \_\_\_\_\_

21A-40.  $\left[\frac{36300 + (1/(4.28 \times 10^{-5}))}{(7040/26000) - 0.164}\right]^2$  ----- 40= \_\_\_\_\_

21A-41.  $(0.968 + 3.14)^2(46.2 + 25.2)^2$  ----- 41= \_\_\_\_\_

21A-42.  $\sqrt{98.9} + \sqrt{93.6 + 133} - (\pi)\sqrt{156}$  ----- 42= \_\_\_\_\_

21A-43.  $(1/(0.0111))(1.10 \times 10^5 - 89000)^3$  ----- 43= \_\_\_\_\_

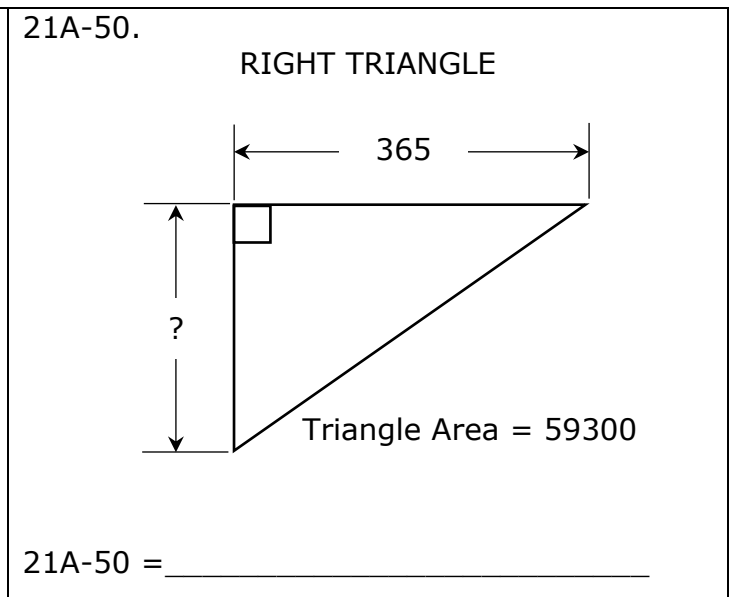
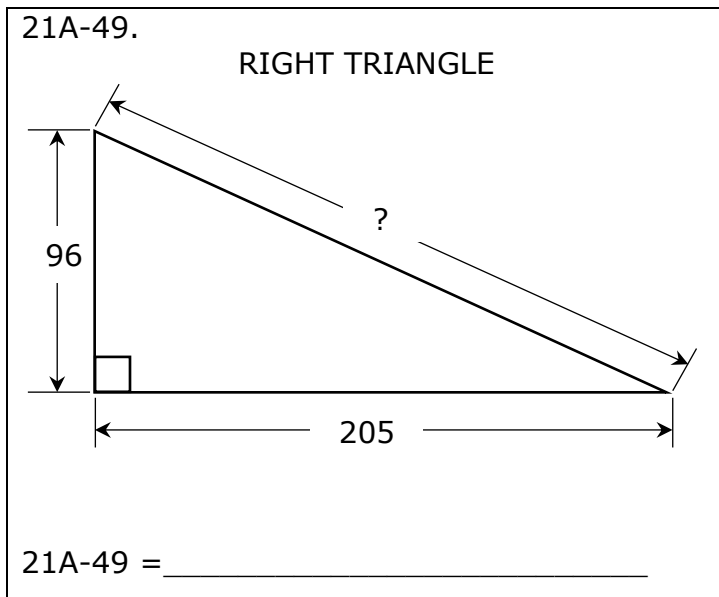
21A-44.  $(1/\pi)\sqrt[3]{\frac{0.0746 + 0.0943}{0.848 - 0.672}}$  ----- 44= \_\_\_\_\_

21A-45.  $(243)\sqrt[3]{2990 + 7290 - 2200}$  ----- 45= \_\_\_\_\_

21A-46.  $\frac{(1680 + 4670)^{1/4}}{(901 - 234)^{1/5}}$  ----- 46= \_\_\_\_\_

21A-47. A crow, sitting on a post 6' above the ground, drops straight down and walks 12' in a straight line in search of worms. If the crow flies back to its original perch, what is the shortest distance it flies? ----- 47= \_\_\_\_\_ ft

21A-48. Albert is driving along at a speed of 72 miles per hour when he passes under a bridge that is 65' wide. How long does it take Albert to pass under the bridge? ----- 48= \_\_\_\_\_ s



$$21A-51. \quad \frac{(6030 + 9020 - 15400)^4}{\sqrt{27400 + 45900 + 15900}} \text{ ----- } 51 = \underline{\hspace{2cm}}$$

$$21A-52. \quad \sqrt{\frac{6.73}{(2.01 \times 10^5)(1.24 \times 10^5)}} + \frac{(0.0117 - 0.00315)}{(175 + 295)} \text{ ----- } 52 = \underline{\hspace{2cm}}$$

$$21A-53. \quad \frac{\sqrt{46.5 + \pi + 41.9}}{(5250 - 1550 + 5080)^2} \text{ ----- } 53 = \underline{\hspace{2cm}}$$

$$21A-54. \quad \sqrt{\frac{(1.43 \times 10^5)(49100)}{(70800)(7590)}} - 0.476 + 0.499 \text{ ----- } 54 = \underline{\hspace{2cm}}$$

$$21A-55. \quad 0.33 + \sqrt{(3050)/(1450)} - (0.127 + 1.12)^2 \text{ ----- } 55 = \underline{\hspace{2cm}}$$

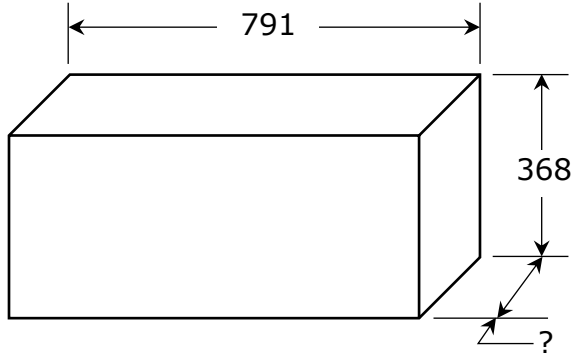
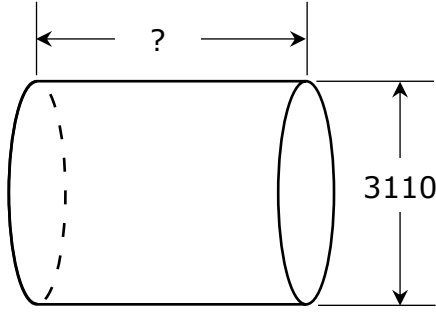
$$21A-56. \quad \sqrt{\frac{1/(19.5 - 13.2)}{(105)(29.8 + 29.4)^6}} \text{ ----- } 56 = \underline{\hspace{2cm}}$$

$$21A-57. \quad (\text{rad}) \tan(223) + (187/37.1) \text{ ----- } 57 = \underline{\hspace{2cm}}$$

$$21A-58. \quad \sqrt{\frac{1/(134 - 90.1)}{(41)(326 + 206)^{-5}}} \text{ ----- } 58 = \underline{\hspace{2cm}}$$

21A-59. The average speed of a moving object can be found by dividing the total distance by the total time. If Andy walks 750 feet in 2 minutes, stops and takes pictures for 2 minutes, then walks another 900 feet in 2.75 minutes, what is Andy's average speed for the total distance traveled? ----- 59 =                                  mph

21A-60. The root-mean-square speed ( $v_{\text{rms}}$ ) of a gas molecule, in m/s, is found by taking the square root of the quantity: three times a constant,  $k$ , times the temperature in Kelvins and dividing this product by the mass of the molecule in kilograms. What is the  $v_{\text{rms}}$  for a molecule of oxygen that has a mass of  $5.31 \times 10^{-26}$  kg and is at a temperature of 293 Kelvins? The value of the constant,  $k$ , is  $1.38 \times 10^{-23}$ . ----- 60 =                                  m/s

<p>21A-61. <b>SOLID RECTANGULAR BOX</b></p>  <p style="text-align: center;">Total Surface Area = 967000</p> <p>21A-61 = _____</p>	<p>21A-62. <b>SOLID RIGHT CYLINDER</b></p>  <p style="text-align: center;">Total Surface Area = <math>5.52 \times 10^7</math></p> <p>21A-62 = _____</p>
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21A-63.  $\frac{14! - 21!}{16!}$  ----- 63 = \_\_\_\_\_

21A-64.  $(147 - \pi)e^{0.548}$  ----- 64 = \_\_\_\_\_

21A-65.  $(\text{deg}) \frac{\tan(175^\circ)}{659}$  ----- 65 = \_\_\_\_\_

21A-66.  $(\text{rad}) \frac{\tan(10.5)}{691/812}$  ----- 66 = \_\_\_\_\_

21A-67.  $(\text{deg}) [277]\cos(45.8^\circ - 150^\circ)$  ----- 67 = \_\_\_\_\_

21A-68.  $(\text{deg}) \frac{\sin(195^\circ)}{\tan(195^\circ)} [8.98]$  ----- 68 = \_\_\_\_\_

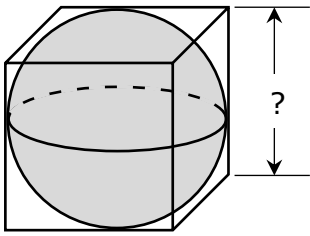
21A-69.  $(\text{deg}) \frac{\sin(327^\circ) - \tan(327^\circ)}{\sin(327^\circ)}$  ----- 69 = \_\_\_\_\_

21A-70.  $(4.66 - 17.6)e^{\pi - 0.68}$  ----- 70 = \_\_\_\_\_

21A-71. Four times a number squared minus twice that number is 15.75. What is the number if it is positive?----- 71 = \_\_\_\_\_

21A-72. Mackenzie bought a new dress for a cost of \$178.60. If this cost included a 8.25% sales tax, what was the cost of the dress without the sales tax? ----- 72 = \$ \_\_\_\_\_

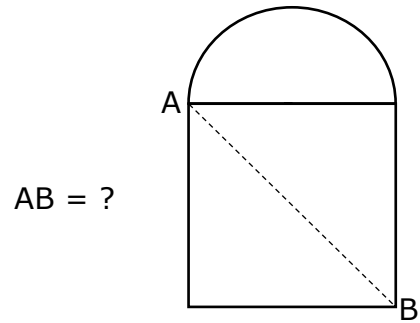
21A-73.  
CUBE WITH INSCRIBED SPHERE



Cube Volume - Sphere Volume = 100

21A-73 = \_\_\_\_\_

21A-74.  
SQUARE AND SEMICIRCLE



Total Area = 100

21A-74 = \_\_\_\_\_

21A-75.  $\frac{\text{Log}(2.51 \times 10^7 + 6.84 \times 10^6)}{16.6}$  ----- 75 = \_\_\_\_\_

21A-76.  $\text{Ln}\left[\frac{541 + 348 + 277}{234 + 439 - 112}\right]$  ----- 76 = \_\_\_\_\_

21A-77.  $\frac{35.9 - 6.27}{\text{Log}(7550 + 10000)}$  ----- 77 = \_\_\_\_\_

21A-78.  $\text{Ln}\left[\frac{204 + 152 + 123}{2890 - 156 - 509}\right]$  ----- 78 = \_\_\_\_\_

21A-79.  $1 + 2 + 3 + \dots + 937$  ----- 79 = \_\_\_\_\_

21A-80.  $-\frac{1}{(8.3)} + \frac{1}{3(8.3)^3} - \frac{1}{5(8.3)^5} + \frac{1}{7(8.3)^7}$  ----- 80 = \_\_\_\_\_

## 2021 UIL MS Calculator Test A Answer Key

21A-1	= -0.480 = $-4.80 \times 10^{-1}$	21A-14	= 0.000150 = $1.50 \times 10^{-4}$	21A-27	= 55.1 = $5.51 \times 10^1$
21A-2	= 14.7 = $1.47 \times 10^1$	21A-15	= $6.90 \times 10^8$	21A-28	= 255 = $2.55 \times 10^2$
21A-3	= -34.0 = $-3.40 \times 10^1$	21A-16	= $-3.18 \times 10^7$	21A-29	= $-1.58 \times 10^{12}$
21A-4	= 5.00 = $5.00 \times 10^0$	21A-17	= -0.802 = $-8.02 \times 10^{-1}$	21A-30	= $1.57 \times 10^{11}$
21A-5	= 1240 = $1.24 \times 10^3$	21A-18	= $3.84 \times 10^{-5}$	21A-31	= $1.39 \times 10^{-7}$
21A-6	= -377 = $-3.77 \times 10^2$	21A-19	= -494 = $-4.94 \times 10^2$	21A-32	= -3.94 = $-3.94 \times 10^0$
21A-7	= 5.02 = $5.02 \times 10^0$	21A-20	= $2.18 \times 10^8$	21A-33	= 1.12 = $1.12 \times 10^0$
21A-8	= -6.23 = $-6.23 \times 10^0$	21A-21	= 0.0157 = $1.57 \times 10^{-2}$	21A-34	= $5.64 \times 10^6$
21A-9	= $8.67 \times 10^6$	21A-22	= 6.93 = $6.93 \times 10^0$	21A-35	= 0.0192 = $1.92 \times 10^{-2}$
21A-10	= $3.91 \times 10^9$	21A-23	= -0.000176 = $-1.76 \times 10^{-4}$	21A-36	= 914 = $9.14 \times 10^2$
21A-11	= 2.83 = $2.83 \times 10^0$	21A-24	= 196 = $1.96 \times 10^2$	21A-37	= 0.176 = $1.76 \times 10^{-1}$
21A-12	= 2.24 Dollar Answer	21A-25	= 216 Integer Answer	21A-38	= $2.74 \times 10^{-7}$
21A-13	= 840 Integer Answer	21A-26	= 75.4 = $7.54 \times 10^1$		



## 2021 UIL MS Calculator Test A Answer Key

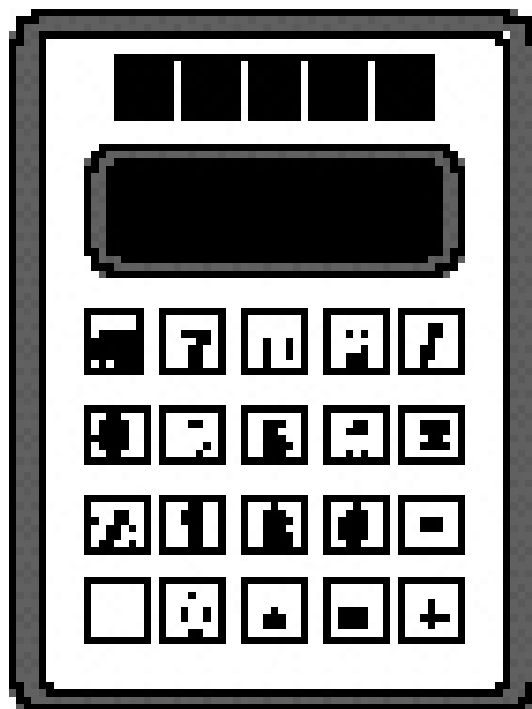
21A-39 = 385000 = $3.85 \times 10^5$	21A-51 = $5.02 \times 10^7$	21A-61 = 166 = $1.66 \times 10^2$	21A-73 = 5.94 = $5.94 \times 10^0$
21A-40 = $3.12 \times 10^{11}$	21A-52 = $3.46 \times 10^{-5}$	21A-62 = 4090 = $4.09 \times 10^3$	21A-74 = 12.0 = $1.20 \times 10^1$
21A-41 = 86000 = $8.60 \times 10^4$	21A-53 = $1.24 \times 10^{-7}$	21A-63 = $-2.44 \times 10^6$	21A-75 = 0.452 = $4.52 \times 10^{-1}$
21A-42 = -14.2 = $-1.42 \times 10^1$	21A-54 = 3.64 = $3.64 \times 10^0$	21A-64 = 249 = $2.49 \times 10^2$	21A-76 = 0.732 = $7.32 \times 10^{-1}$
21A-43 = $8.34 \times 10^{14}$	21A-55 = 0.225 = $2.25 \times 10^{-1}$	21A-65 = -0.000133 = $-1.33 \times 10^{-4}$	21A-77 = 6.98 = $6.98 \times 10^0$
21A-44 = 0.314 = $3.14 \times 10^{-1}$	21A-56 = $1.87 \times 10^{-7}$	21A-66 = 2.17 = $2.17 \times 10^0$	21A-78 = -1.54 = $-1.54 \times 10^0$
21A-45 = 4880 = $4.88 \times 10^3$	21A-57 = 4.99 = $4.99 \times 10^0$	21A-67 = -68.0 = $-6.80 \times 10^1$	21A-79 = 439000 = $4.39 \times 10^5$
21A-46 = 2.43 = $2.43 \times 10^0$	21A-58 = 154000 = $1.54 \times 10^5$	21A-68 = -8.67 = $-8.67 \times 10^0$	21A-80 = -0.120 = $-1.20 \times 10^{-1}$
21A-47 = 13.4 = $1.34 \times 10^1$	21A-59 = 2.78 = $2.78 \times 10^0$	21A-69 = -0.192 = $-1.92 \times 10^{-1}$	
21A-48 = 0.616 = $6.16 \times 10^{-1}$	21A-60 = 478 = $4.78 \times 10^2$	21A-70 = -152 = $-1.52 \times 10^2$	
21A-49 = 226 = $2.26 \times 10^2$		21A-71 = 2.25 = $2.25 \times 10^0$	
21A-50 = 325 = $3.25 \times 10^2$		21A-72 = 164.99 Dollar Answer	

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Calculator Applications

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

## 2021 UIL MS Calculator Test B

21B-1.  $6.82 + 3.16$  ----- 1= \_\_\_\_\_

21B-2.  $-69 + 93 + 84$  ----- 2= \_\_\_\_\_

21B-3.  $97.4 + 455 + 212$  ----- 3= \_\_\_\_\_

21B-4.  $-27 - \pi - 5 + 20$  ----- 4= \_\_\_\_\_

21B-5.  $2140 - 1860 + 3880 - 782$  ----- 5= \_\_\_\_\_

21B-6.  $409 - 160 - 255 + 353 + 370$  ----- 6= \_\_\_\_\_

21B-7.  $(3.82 - 4.23) + (4.3 - 3.39 - 0.983)$  ----- 7= \_\_\_\_\_

21B-8.  $(4.63 + 1.92 - \pi) - (1.9 + 2.31)$  ----- 8= \_\_\_\_\_

21B-9.  $155 \times 47.3 \times 178$  ----- 9= \_\_\_\_\_

21B-10.  $346 \times 3770 \times 2540 \times 3110$  ----- 10= \_\_\_\_\_

21B-11. What is the result if twelve-point six pi is added to the negative square root of 120?----- 11= \_\_\_\_\_

21B-12. The three Gonzales children decided to give their savings in each of their piggy banks to a local charity in desperate need of funds. Mackenzie said she would donate \$28.13, Wesley said he would donate \$18.73 and Noah stated that he would give the 15 quarters, 16 dimes and 23 pennies he had. How much money did the children donate?----- 12=\$ \_\_\_\_\_

21B-13. As a waiter in a local restaurant, Dan worked 14 hours and received \$135.50 in tips. How much per hour did Dan make? ----- 13= \_\_\_\_\_ \$/hr.

21B-14.  $-267/[123 \times 290 \times 212]$  ----- 14= \_\_\_\_\_

21B-15.  $-43 - [68/138 + 0.973]$  ----- 15= \_\_\_\_\_

21B-16.  $\left[\frac{-22}{108}\right] [(91/81) - 0.24]$  ----- 16= \_\_\_\_\_

21B-17.  $\{-97/96\} \left[\frac{78}{67 + 141}\right]$  ----- 17= \_\_\_\_\_

21B-18.  $\left[\frac{(3240/5090) - (1990/3170)}{16.1/(16.9)}\right]$  ----- 18= \_\_\_\_\_

21B-19.  $\left[\frac{37/95}{153/141}\right] \{0.149 + 0.13 - 0.148\}$  ----- 19= \_\_\_\_\_

21B-20.  $\frac{137}{(112 - 57)} - \frac{(47 - 78)}{140}$  ----- 20= \_\_\_\_\_

21B-21.  $\frac{(\pi)(7/42)(48/25)}{107}$  ----- 21= \_\_\_\_\_

21B-22.  $\frac{[-(2000 + 1230)(2000 - 2050)]}{(3.68 \times 10^{-4} / (0.533))}$  ----- 22= \_\_\_\_\_

21B-23.  $\left[\frac{4500 + 3270}{3110 - 1520}\right] \left[\frac{1460}{2830}\right]$  ----- 23= \_\_\_\_\_

21B-24. How many U.S. postage stamps can one buy with \$20 if each stamp currently costs 55¢?----- 24= \_\_\_\_\_ integer

21B-25. With a 6-inch diameter auger, Mike dug a hole 28 inches deep. How much dirt did Mike dig out?----- 25= \_\_\_\_\_ in<sup>3</sup>

21B-26. When Genny walked into a local ice cream shop she found that the shop had 24 different flavors of ice cream, 6 different types of sprinkles for toppings and 2 different types of ice cream cones. How many different combinations of ice cream, sprinkle and cone are available from this ice cream shop for Genny?----- 26= \_\_\_\_\_ integer

21B-27.  $\frac{(111 + 87.2)(0.024 + 0.0483)}{(3.47 \times 10^{10})}$  ----- 27= \_\_\_\_\_

21B-28.  $(0.159)[[0.12/(0.107)][0.00122/(0.00488)]]$  ----- 28= \_\_\_\_\_

21B-29.  $\frac{(4.32 \times 10^8) + (1.54 \times 10^8)}{(-13.1)(3.27) - 10.6}$  ----- 29= \_\_\_\_\_

21B-30.  $(0.00983)\left[\frac{0.112}{(2.01 \times 10^7)}\right]$  ----- 30= \_\_\_\_\_

21B-31.  $(43.3)[(3.68 \times 10^8) - (6.90 \times 10^8)]$  ----- 31= \_\_\_\_\_

21B-32.  $\frac{1}{0.265} + \frac{1}{(3.95 - 3.46)}$  ----- 32= \_\_\_\_\_

21B-33.  $\frac{1}{(0.129 - 0.232)} - \frac{1}{(-0.0874)}$  ----- 33= \_\_\_\_\_

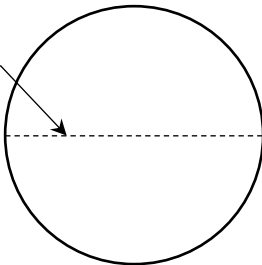
21B-34.  $\frac{1}{200} - \frac{1}{(290 + 164)}$  ----- 34= \_\_\_\_\_

21B-35. While driving along at an average speed of 71 mph, Liz saw a highway sign that stated the next restroom stop was 13 miles away. How long will it take Liz to get to the restroom stop?----- 35= \_\_\_\_\_ min

21B-36. A men's basketball is 24.26 cm in diameter. If Matt rolls this basketball 65 feet, how many revolutions (rev) does the ball turn? ---- 36= \_\_\_\_\_ rev

21B-37.

CIRCLE



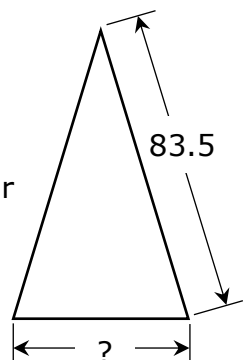
Diameter = ?

Circle Circumference = 0.000737

21B-37 = \_\_\_\_\_

21B-38.

ISOSCELES TRIANGLE



Triangle Perimeter = 212

83.5

?

21B-38 = \_\_\_\_\_

21B-39.  $\frac{(5100 + 4010)^2}{(0.226 - 0.455)^3}$  ----- 39= \_\_\_\_\_

21B-40.  $(0.285 + 0.184 + 0.109)^2(4410 + 3920)^2$  ----- 40= \_\_\_\_\_

21B-41.  $\sqrt{\frac{0.0867 + 0.08}{0.443 - 0.174}}$  ----- 41= \_\_\_\_\_

21B-42.  $(9440)\sqrt{913 + 181 + 432}$  ----- 42= \_\_\_\_\_

21B-43.  $\sqrt{897} + \sqrt{1460 + 886} - (\pi)\sqrt{1970}$  ----- 43= \_\_\_\_\_

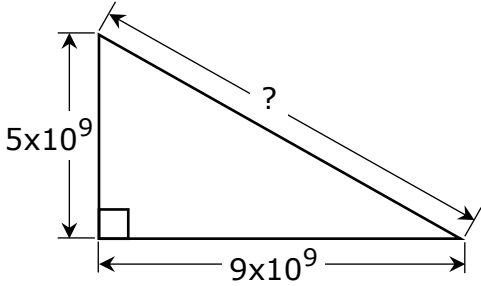
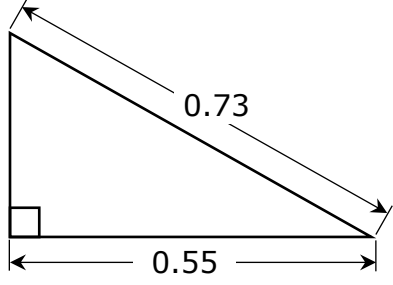
21B-44.  $(1/(0.00297))(5.38 \times 10^5 - 3.42 \times 10^5)^2$  ----- 44= \_\_\_\_\_

21B-45.  $\frac{(3.62 + 6.27)^{1/3}}{(118 - 81.6)^{1/5}}$  ----- 45= \_\_\_\_\_

21B-46.  $\sqrt[3]{0.516 - 25.6/121} + 1/\sqrt{34.6 + 21.7}$  ----- 46= \_\_\_\_\_

21B-47. Andy took a 12' long rope and attached one end to a vertical pipe 6' above the ground. He then stretched the rope taut and with the other end traced a circle along the level ground. What is the circumference of this circle? ----- 47= \_\_\_\_\_ ft

21B-48. Arturo walked 330' due west and stopped. He then walked 500' away to a spot due south of the point he started at. How far away is he from his starting point? ----- 48= \_\_\_\_\_ ft

<p>21B-49. <b>RIGHT TRIANGLE</b></p>  <p style="text-align: center;">21B-49 = _____</p>	<p>21B-50. <b>RIGHT TRIANGLE</b></p>  <p style="text-align: center;">Triangle Area = ?</p> <p style="text-align: center;">21B-50 = _____</p>
--	--

$$21B-51. \left[ \frac{18.2 + 148 + \sqrt{11900 + 27100}}{4580/14100} \right]^4 \text{ ----- } 51 = \underline{\hspace{2cm}}$$

$$21B-52. \frac{(3.49 + 9.2 - 8.59)^3}{\sqrt{96300 + 19300 + 88000}} \text{ ----- } 52 = \underline{\hspace{2cm}}$$

$$21B-53. \sqrt{\frac{2.65 \times 10^{-10}}{(1.86)(1.88)}} + \frac{(2.35 - 4)}{(1.10 \times 10^5 + 71200)} \text{ ----- } 53 = \underline{\hspace{2cm}}$$

$$21B-54. \sqrt{\frac{1/(62.1 - 58.9)}{(35.6)(342 + 206)^4}} \text{ ----- } 54 = \underline{\hspace{2cm}}$$

$$21B-55. (239)(1.65 \times 10^7)^{1/2} - [(7.52 \times 10^8)(5.62 \times 10^9)]^{1/3} \text{ ----- } 55 = \underline{\hspace{2cm}}$$

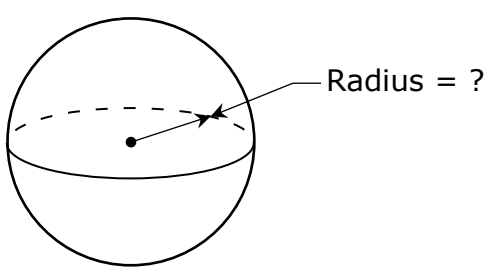
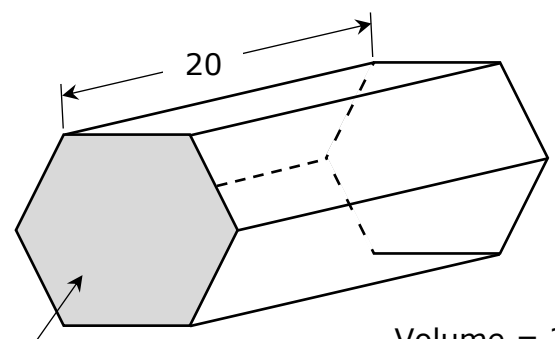
$$21B-56. \sqrt{\frac{(4090)(6.16 \times 10^5)}{(9700)(46400)}} - 1.82 + 1.57 \text{ ----- } 56 = \underline{\hspace{2cm}}$$

$$21B-57. (\text{rad}) \sin(163) + (298/346) \text{ ----- } 57 = \underline{\hspace{2cm}}$$

$$21B-58. \sqrt{\frac{(10.1)(939)}{(15.9) + (10.9)}} + 1/(18.9)^{-1} \text{ ----- } 58 = \underline{\hspace{2cm}}$$

21B-59. Two worms are moving toward each other at constant speeds oblivious to each other. One worm is moving at a speed of 8.25 inches per minute (ipm), while the other worm is moving with a speed of 11.25 ipm. If the worms are initially 8.75 feet apart, how long in minutes, will it take them to meet? ----- 59 =                      min

21B-60. When an object is moving, its observed length appears to be different as measured by someone not moving with it. The formula for calculating this observed length is to multiply the object's rest length by the square root of one minus the quantity of the object's speed squared divided by the speed of light squared. So, an object with rest length of 10 meters and moving at a speed of  $2 \times 10^8$  m/s could be observed to have what length? Let the speed of light equal  $3 \times 10^8$  m/s. ----- 60 =                      m

<p>21B-61.</p> <p style="text-align: center;">SPHERE</p>  <p style="text-align: center;">Sphere Surface Area = <math>8.04 \times 10^{-12}</math></p> <p>21B-61 = _____</p>	<p>21B-62.</p> <p style="text-align: center;">RIGHT HEXAGONAL PRISM</p>  <p style="text-align: right;">Volume = ?</p> <p style="text-align: center;">Shaded Area = 200</p> <p>21B-62 = _____</p>
---	--

21B-63.  $\frac{14!}{4!} - 12!$  ----- 63 = \_\_\_\_\_

21B-64. (deg)  $\frac{\tan(5.12^\circ)}{172}$  ----- 64 = \_\_\_\_\_

21B-65. (deg)  $(9.46 - 11)\sin(11.2^\circ)$  ----- 65 = \_\_\_\_\_

21B-66. (deg)  $[111]\cos(29.7^\circ - 27.6^\circ)$  ----- 66 = \_\_\_\_\_

21B-67. (rad)  $\sin\left[\frac{(2.19)(\pi)}{(142)(137)}\right]$  ----- 67 = \_\_\_\_\_

21B-68. (deg)  $\frac{\sin(179^\circ)}{1280 + 775}$  ----- 68 = \_\_\_\_\_

21B-69. (deg)  $\frac{\sin(23.5^\circ)}{\tan(23.5^\circ)}[398]$  ----- 69 = \_\_\_\_\_

21B-70.  $(22.6 + 3.13 + 3.75)^{2/5}$  ----- 70 = \_\_\_\_\_

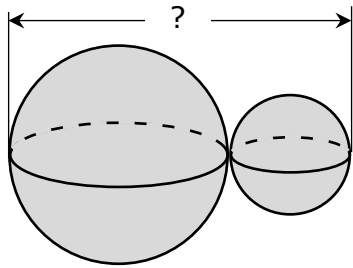
21B-71. During the COVID-19 epidemic, Noah's day care went from a normal population of 32 to 17. What percent decrease is this? ----- 71 = \_\_\_\_\_ %

21B-72. Three times a number squared added to ten times that number is eight. What is the number, if it is negative? ----- 72 = \_\_\_\_\_



21B-73.

SPHERES

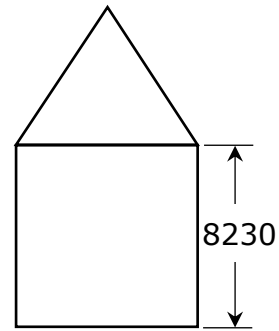


Volume Large Sphere = 200      Volume Small Sphere =  $\frac{1}{3}$  Volume Large Sphere

21B-73 = \_\_\_\_\_

21B-74.

SQUARE AND EQUILATERAL TRIANGLE



Total Area = ?

21B-74 = \_\_\_\_\_

21B-75.  $\frac{(26.1)^{0.647}(19.6)^{0.665}}{(17.2 - 8.68)^{-7}}$  ----- 75= \_\_\_\_\_

21B-76.  $\frac{\text{Log}(3.29 \times 10^5 + 4.43 \times 10^5)}{3.31}$  ----- 76= \_\_\_\_\_

21B-77.  $\frac{3610 - 1830}{\text{Log}(10700 + 12100)}$  ----- 77= \_\_\_\_\_

21B-78.  $\frac{\text{Log}[3020 + (907)(14.6)]}{1.76 + \text{Log}[279 + 136]}$  ----- 78= \_\_\_\_\_

21B-79.  $2 + 4 + 6 + \dots + 462$  ----- 79= \_\_\_\_\_

21B-80.  $\frac{1}{(0.689)} + \frac{1}{3(0.689)^3} + \frac{1}{5(0.689)^5} + \frac{1}{7(0.689)^7}$  ----- 80= \_\_\_\_\_

## 2021 UIL MS Calculator Test B Answer Key

21B-1	= 9.98 = $9.98 \times 10^0$	21B-14	= $-3.53 \times 10^{-5}$	21B-27	= $4.13 \times 10^{-10}$
21B-2	= 108 = $1.08 \times 10^2$	21B-15	= -44.5 = $-4.45 \times 10^1$	21B-28	= 0.0446 = $4.46 \times 10^{-2}$
21B-3	= 764 = $7.64 \times 10^2$	21B-16	= -0.180 = $-1.80 \times 10^{-1}$	21B-29	= $-1.10 \times 10^7$
21B-4	= -15.1 = $-1.51 \times 10^1$	21B-17	= -0.379 = $-3.79 \times 10^{-1}$	21B-30	= $5.48 \times 10^{-11}$
21B-5	= 3380 = $3.38 \times 10^3$	21B-18	= 0.00922 = $9.22 \times 10^{-3}$	21B-31	= $-1.39 \times 10^{10}$
21B-6	= 717 = $7.17 \times 10^2$	21B-19	= 0.0470 = $4.70 \times 10^{-2}$	21B-32	= 5.81 = $5.81 \times 10^0$
21B-7	= -0.483 = $-4.83 \times 10^{-1}$	21B-20	= 2.71 = $2.71 \times 10^0$	21B-33	= 1.73 = $1.73 \times 10^0$
21B-8	= -0.802 = $-8.02 \times 10^{-1}$	21B-21	= 0.00940 = $9.40 \times 10^{-3}$	21B-34	= 0.00280 = $2.80 \times 10^{-3}$
21B-9	= $1.31 \times 10^6$	21B-22	= $2.34 \times 10^8$	21B-35	= 11.0 = $1.10 \times 10^1$
21B-10	= $1.03 \times 10^{13}$	21B-23	= 2.52 = $2.52 \times 10^0$	21B-36	= 26.0 = $2.60 \times 10^1$
21B-11	= 28.6 = $2.86 \times 10^1$	21B-24	= 36 Integer Answer	21B-37	= 0.000235 = $2.35 \times 10^{-4}$
21B-12	= 52.44 Dollar Answer	21B-25	= 792 = $7.92 \times 10^2$	21B-38	= 45.0 = $4.50 \times 10^1$
21B-13	= 9.68 = $9.68 \times 10^0$	21B-26	= 288 Integer Answer		

## 2021 UIL MS Calculator Test B Answer Key

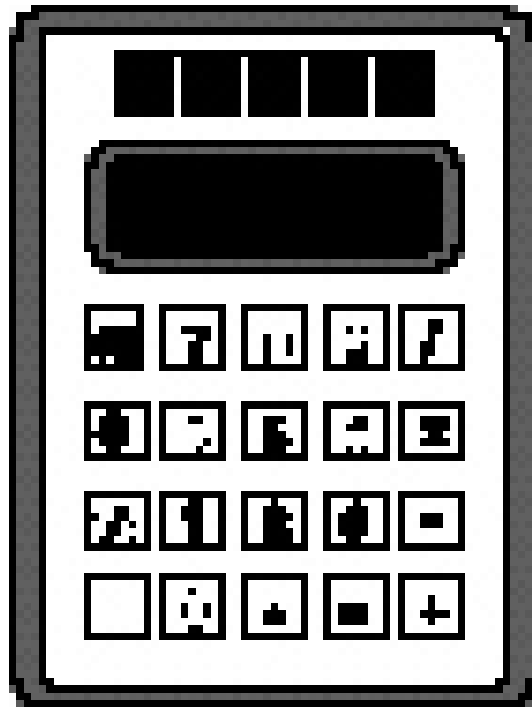
21B-39 = $-6.91 \times 10^9$	21B-51 = $1.57 \times 10^{12}$	21B-61 = $8.00 \times 10^{-7}$	21B-73 = 12.3 = $1.23 \times 10^1$
21B-40 = $2.32 \times 10^7$	21B-52 = 0.153 = $1.53 \times 10^{-1}$	21B-62 = 4000 = $4.00 \times 10^3$	21B-74 = $9.71 \times 10^7$
21B-41 = 0.787 = $7.87 \times 10^{-1}$		21B-63 = $3.15 \times 10^9$	21B-75 = $1.95 \times 10^8$
21B-42 = 369000 = $3.69 \times 10^5$	21B-53 = $-4.01 \times 10^{-7}$	21B-64 = 0.000521 = $5.21 \times 10^{-4}$	21B-76 = 1.78 = $1.78 \times 10^0$
21B-43 = -61.1 = $-6.11 \times 10^1$	21B-54 = $3.12 \times 10^{-7}$	21B-65 = -0.299 = $-2.99 \times 10^{-1}$	21B-77 = 408 = $4.08 \times 10^2$
21B-44 = $1.29 \times 10^{13}$	21B-55 = -646000 = $-6.46 \times 10^5$	21B-66 = 111 = $1.11 \times 10^2$	
21B-45 = 1.05 = $1.05 \times 10^0$	21B-56 = 2.12 = $2.12 \times 10^0$	21B-67 = 0.000354 = $3.54 \times 10^{-4}$	21B-78 = 0.962 = $9.62 \times 10^{-1}$
21B-46 = 0.806 = $8.06 \times 10^{-1}$	21B-57 = 0.506 = $5.06 \times 10^{-1}$	21B-68 = $8.49 \times 10^{-6}$	21B-79 = 53600 = $5.36 \times 10^4$
21B-47 = 65.3 = $6.53 \times 10^1$		21B-69 = 365 = $3.65 \times 10^2$	
21B-48 = 376 = $3.76 \times 10^2$	21B-58 = 37.7 = $3.77 \times 10^1$	21B-70 = 3.87 = $3.87 \times 10^0$	21B-80 = 5.70 = $5.70 \times 10^0$
21B-49 = $1.03 \times 10^{10}$	21B-59 = 5.38 = $5.38 \times 10^0$	21B-71 = 46.9 = $4.69 \times 10^1$	
21B-50 = 0.132 = $1.32 \times 10^{-1}$	21B-60 = 7.45 = $7.45 \times 10^0$	21B-72 = -4.00 = $-4.00 \times 10^0$	

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Calculator Applications

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

## 2021 UIL MS Calculator Test C

51C-1.  $50.4 + 73.4$  ----- 1= \_\_\_\_\_

51C-2.  $-6 - 6 - 13$  ----- 2= \_\_\_\_\_

51C-3.  $461 + 1590 - 2190$  ----- 3= \_\_\_\_\_

51C-4.  $29 - 23 - 30 - 19$  ----- 4= \_\_\_\_\_

51C-5.  $-98 - 29 - 180 - 47$  ----- 5= \_\_\_\_\_

51C-6.  $261 - 460 - 267 - 350 + 205$  ----- 6= \_\_\_\_\_

51C-7.  $0.603 + 0.532 - 0.269 + 0.43 + 1.56$  ----- 7= \_\_\_\_\_

51C-8.  $2.17 + \pi + 3.75 + 3.18 + 1.99$  ----- 8= \_\_\_\_\_

51C-9.  $32.2 \times 224 \times 236$  ----- 9= \_\_\_\_\_

51C-10.  $204 \times 154 \times 60.7 \times 625$  ----- 10= \_\_\_\_\_

51C-11. What is the result if nine-point seven pi is added to the negative square root of 125?----- 11= \_\_\_\_\_

51C-12. The three Gonzales children decided to give their savings in each of their piggy banks to a local charity in desperate need of funds. Mackenzie said she would donate \$32.45, Wesley said he would donate \$23.73 and Noah stated that he would give the 16 quarters, 9 dimes and 62 pennies he had. How much money did the children donate?----- 12=\$\_\_\_\_\_

51C-13. As a waiter in a local restaurant, Dan worked 16 hours and received \$148.50 in tips. How much per hour did Dan make? ----- 13= \_\_\_\_\_ \$/hr.

51C-14.  $84/[123 \times 119 \times 122]$  ----- 14= \_\_\_\_\_

51C-15.  $(-171/55)[220 - 42]$  ----- 15= \_\_\_\_\_

51C-16.  $\{227/94\} \left[ \frac{167}{178 + 149} \right]$  ----- 16= \_\_\_\_\_

51C-17.  $\left[ \frac{139}{106} \right] [(118/57) - 0.238]$  ----- 17= \_\_\_\_\_

51C-18.  $\left[ \frac{(1610/5210) - (2610/4600)}{0.132/(0.173)} \right]$  ----- 18= \_\_\_\_\_

51C-19.  $\frac{[0.183/(0.0928)]/0.0939}{(162 \times 59.2)(14.5)}$  ----- 19= \_\_\_\_\_

51C-20.  $\frac{(\pi)(7/2)(6/3)}{77}$  ----- 20= \_\_\_\_\_

51C-21.  $\left[ \frac{(0.336)(2.2)}{1.58 \times 10^{-4}} \right] (0.00312 - 0.00962)$  ----- 21= \_\_\_\_\_

51C-22.  $\left[ \frac{2450 + 1420}{2900 - 1850} \right] \left[ \frac{545}{2350} \right]$  ----- 22= \_\_\_\_\_

51C-23.  $\frac{(527 \times 503)/2330}{(1380 \times 168) + 1.96 \times 10^5}$  ----- 23= \_\_\_\_\_

51C-24. How many U.S. postage stamps can one buy with \$30 if each stamp currently costs 55¢?----- 24= \_\_\_\_\_ integer

51C-25. With a 6-inch diameter auger, Mike dug a hole 32 inches deep. How much dirt did Mike dig out?----- 25= \_\_\_\_\_ in<sup>3</sup>

51C-26. When Genny walked into a local ice cream shop she found that the shop had 36 different flavors of ice cream, 6 different types of sprinkles for toppings and 2 different types of ice cream cones. How many different combinations of ice cream, sprinkle and cone are available from this ice cream shop for Genny?----- 26= \_\_\_\_\_ integer

51C-27.  $\frac{(3.75 \times 10^5) + (1.32 \times 10^6)}{(-0.553)(0.986) - 0.464}$  ----- 27= \_\_\_\_\_

51C-28.  $\frac{(3.35 - 1.47)(20.5 + 5.53)}{(4.36 \times 10^{12})}$  ----- 28= \_\_\_\_\_

51C-29.  $\frac{(79.5 + 27.1)(129 + 107)}{(1.97 \times 10^{11})}$  ----- 29= \_\_\_\_\_

51C-30.  $[58.3] \left[ \frac{1/1.4}{1/(\pi)} \right]$  ----- 30= \_\_\_\_\_

51C-31.  $\frac{1}{0.00468} + \frac{1}{(\pi)(0.0851 - 0.0764)}$  ----- 31= \_\_\_\_\_

51C-32.  $(13.4) [(8.80 \times 10^{-10}) - (1.58 \times 10^{-9})]$  ----- 32= \_\_\_\_\_

51C-33.  $\left[ \frac{1/225}{1/53.6} \right] + [0.344]$  ----- 33= \_\_\_\_\_

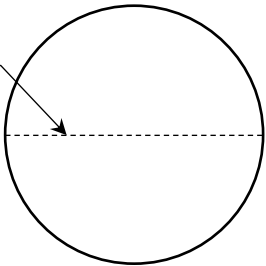
51C-34.  $\frac{1}{(0.203 - 0.13)} - \frac{1}{(0.0411)}$  ----- 34= \_\_\_\_\_

51C-35. While driving along at an average speed of 72 mph, Liz saw a highway sign that stated the next restroom stop was 15 miles away. How long will it take Liz to get to the restroom stop?----- 35= \_\_\_\_\_ min

51C-36. A men's basketball is 24.26 cm in diameter. If Matt rolls this basketball 85 feet, how many revolutions (rev) does the ball turn? ---- 36= \_\_\_\_\_ rev

51C-37.

CIRCLE



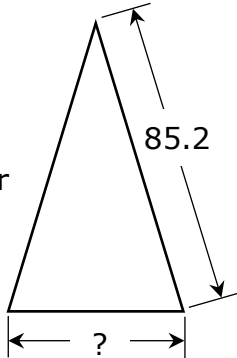
Diameter = ?

Circle Circumference = 0.000131

51C-37 = \_\_\_\_\_

51C-38.

ISOSCELES TRIANGLE



Triangle Perimeter = 210

51C-38 = \_\_\_\_\_

51C-39.  $(13.5 + 47.5 + 14.5)^2(0.0582 + 0.0872)^2$  ----- 39= \_\_\_\_\_

51C-40.  $\left[ \frac{1500 + (1/(0.00128))}{(1300/567) - 1.85} \right]^2$  ----- 40= \_\_\_\_\_

51C-41.  $\left[ \frac{555}{44} \right](502 + 641)^3$  ----- 41= \_\_\_\_\_

51C-42.  $\sqrt{2170 - 1930 + 2060} - \sqrt{632}$  ----- 42= \_\_\_\_\_

51C-43.  $\sqrt{(1.37/1.4) + 0.729 - 0.495}$  ----- 43= \_\_\_\_\_

51C-44.  $(1/(0.00731))(9880 - 3630)^3$  ----- 44= \_\_\_\_\_

51C-45.  $\sqrt{6.89 - 881/314} + 1/\sqrt{0.0444 + 0.0106}$  ----- 45= \_\_\_\_\_

51C-46.  $\frac{1}{\sqrt{147 + 565 + 135}} + \left( \frac{1}{\sqrt{4.87}} \right)^4$  ----- 46= \_\_\_\_\_

51C-47. Andy took a 15' long rope and attached one end to a vertical pipe 6' above the ground. He then stretched the rope taut and with the other end traced a circle along the level ground. What is the circumference of this circle? ----- 47= \_\_\_\_\_ ft

51C-48. Arturo walked 400' due west and stopped. He then walked 550' away to a spot due south of the point he started at. How far away is he from his starting point? ----- 48= \_\_\_\_\_ ft

51C-49. RIGHT TRIANGLE

51C-49 = \_\_\_\_\_

51C-50. RIGHT TRIANGLE

Triangle Area = ?

51C-50 = \_\_\_\_\_



$$51C-51. \frac{\sqrt{39.3 + \pi + 18.4}}{(0.0479 - 0.106 + 0.105)^4} \text{ ----- } 51 = \underline{\hspace{2cm}}$$

$$51C-52. \left[ \frac{\sqrt{\sqrt{1.56 \times 10^5 - 88300}}}{-(676 - 764)} \right]^2 [18300 + 19000] \text{ ----- } 52 = \underline{\hspace{2cm}}$$

$$51C-53. \left[ \frac{245 + 169 + \sqrt{1.32 \times 10^5 + 1.34 \times 10^5}}{22.2/25.8} \right]^3 \text{ ----- } 53 = \underline{\hspace{2cm}}$$

$$51C-54. (246)(3.81 \times 10^7)^{1/2} - [(2.05 \times 10^{12})(1.50 \times 10^{13})]^{1/4} \text{ ---- } 54 = \underline{\hspace{2cm}}$$

$$51C-55. (120)^2 \sqrt{(7.15)/(4.05)} - (10700 + 2430) \text{ ----- } 55 = \underline{\hspace{2cm}}$$

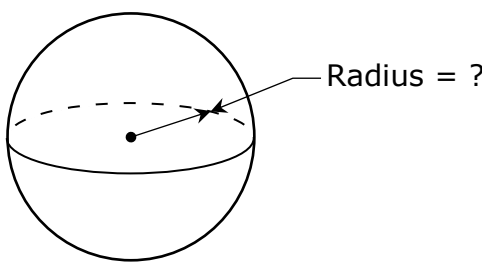
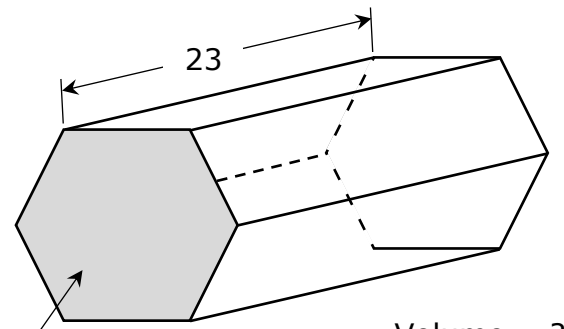
$$51C-56. 0.312 + \sqrt{(124)/(405)} - (0.386 + 0.472)^2 \text{ ----- } 56 = \underline{\hspace{2cm}}$$

$$51C-57. \sqrt{\frac{(4.03)(16.3)}{(25.5) + (29.6)}} - 2.3 \text{ ----- } 57 = \underline{\hspace{2cm}}$$

$$51C-58. (\text{deg}) \tan(33^\circ) + (381/256) \text{ ----- } 58 = \underline{\hspace{2cm}}$$

51C-59. Two worms are moving toward each other at constant speeds oblivious to each other. One worm is moving at a speed of 8.75 inches per minute (ipm), while the other worm is moving with a speed of 10.25 ipm. If the worms are initially 9.75 feet apart, how long in minutes, will it take them to meet? ----- 59 =                      min

51C-60. When an object is moving, its observed length appears to be different as measured by someone not moving with it. The formula for calculating this observed length is to multiply the object's rest length by the square root of one minus the quantity of the object's speed squared divided by the speed of light squared. So, an object with rest length of 10 meters and moving at a speed of  $2.5 \times 10^8$  m/s could be observed to have what length? Let the speed of light equal  $3 \times 10^8$  m/s. ----- 60 =                      m

<p>51C-61.</p> <p style="text-align: center;">SPHERE</p>  <p style="text-align: center;">Sphere Surface Area = <math>8.50 \times 10^{-11}</math></p> <p>51C-61 = _____</p>	<p>51C-62.</p> <p style="text-align: center;">RIGHT HEXAGONAL PRISM</p>  <p style="text-align: right;">Volume = ?</p> <p style="text-align: center;">Shaded Area = 250</p> <p>51C-62 = _____</p>
---	--

51C-63.  $\frac{14! + 13!}{9!}$  ----- 63= \_\_\_\_\_

51C-64. (deg)  $(160 - 597)\sin(510^\circ)$  ----- 64= \_\_\_\_\_

51C-65. (deg)  $(9.77 + 42.5)\sin(403^\circ)$  ----- 65= \_\_\_\_\_

51C-66. (rad)  $\frac{\sin(431)}{1680/986}$  ----- 66= \_\_\_\_\_

51C-67. (deg)  $\sin(11.2^\circ - 27.2^\circ) + 0.232$  ----- 67= \_\_\_\_\_

51C-68. (rad)  $\sin[(2.9 - 0.655)(39)]$  ----- 68= \_\_\_\_\_

51C-69. (deg)  $\frac{\tan(13^\circ)}{1340 + 1300}$  ----- 69= \_\_\_\_\_

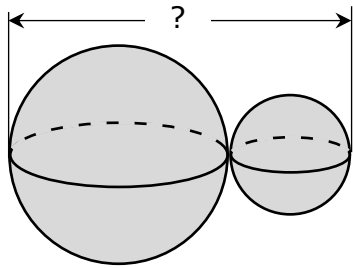
51C-70.  $\left[ (150) \left( \frac{684}{(1400)(\pi)} \right) \right]^{3/2}$  ----- 70= \_\_\_\_\_

51C-71. During the COVID-19 epidemic, Noah's day care went from a normal population of 28 to 18. What percent decrease is this? ----- 71= \_\_\_\_\_ %

51C-72. Two times a number squared minus three times that number is thirty-five. What is the number, if it is negative?----- 72= \_\_\_\_\_

51C-73.

SPHERES

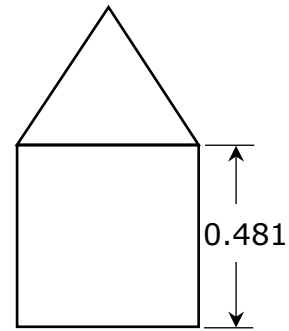


Volume Large Sphere = 267      Volume Small Sphere =  $\frac{1}{3}$  Volume Large Sphere

51C-73 = \_\_\_\_\_

51C-74.

SQUARE AND EQUILATERAL TRIANGLE



Total Area = ?

51C-74 = \_\_\_\_\_

51C-75.  $\text{Ln}\left[\frac{80.2 + 61 + 87.7}{292 + 684 - 563}\right]$  ----- 75= \_\_\_\_\_

51C-76.  $\frac{\text{Log}(7.17 + 42.5)}{5760 - 34000}$  ----- 76= \_\_\_\_\_

51C-77.  $\text{Log}\sqrt{\frac{448 - 358}{(0.9)(1.31)}}$  ----- 77= \_\_\_\_\_

51C-78.  $\frac{(e^{0.809})(e^{0.858})(e^{0.859})}{\text{Ln}(2010 + 4810)}$  ----- 78= \_\_\_\_\_

51C-79.  $1 + 3 + 5 + \dots + 957$  ----- 79= \_\_\_\_\_

51C-80.  $-\frac{1}{(3.4)} + \frac{1}{3(3.4)^3} - \frac{1}{5(3.4)^5} + \frac{1}{7(3.4)^7}$  ----- 80= \_\_\_\_\_

## 2021 UIL MS Calculator Test C Answer Key

$$\begin{aligned} 51C-1 &= 124 \\ &= 1.24 \times 10^2 \end{aligned}$$

$$\begin{aligned} 51C-2 &= -25.0 \\ &= -2.50 \times 10^1 \end{aligned}$$

$$\begin{aligned} 51C-3 &= -139 \\ &= -1.39 \times 10^2 \end{aligned}$$

$$\begin{aligned} 51C-4 &= -43.0 \\ &= -4.30 \times 10^1 \end{aligned}$$

$$\begin{aligned} 51C-5 &= -354 \\ &= -3.54 \times 10^2 \end{aligned}$$

$$\begin{aligned} 51C-6 &= -611 \\ &= -6.11 \times 10^2 \end{aligned}$$

$$\begin{aligned} 51C-7 &= 2.86 \\ &= 2.86 \times 10^0 \end{aligned}$$

$$\begin{aligned} 51C-8 &= 14.2 \\ &= 1.42 \times 10^1 \end{aligned}$$

$$51C-9 = 1.70 \times 10^6$$

$$51C-10 = 1.19 \times 10^9$$

$$\begin{aligned} 51C-11 &= 19.3 \\ &= 1.93 \times 10^1 \end{aligned}$$

$$\begin{aligned} 51C-12 &= 61.70 \\ &\text{Dollar Answer} \end{aligned}$$

$$\begin{aligned} 51C-13 &= 9.28 \\ &= 9.28 \times 10^0 \end{aligned}$$

$$51C-14 = 4.70 \times 10^{-5}$$

$$\begin{aligned} 51C-15 &= -553 \\ &= -5.53 \times 10^2 \end{aligned}$$

$$\begin{aligned} 51C-16 &= 1.23 \\ &= 1.23 \times 10^0 \end{aligned}$$

$$\begin{aligned} 51C-17 &= 2.40 \\ &= 2.40 \times 10^0 \end{aligned}$$

$$\begin{aligned} 51C-18 &= -0.339 \\ &= -3.39 \times 10^{-1} \end{aligned}$$

$$\begin{aligned} 51C-19 &= 0.000151 \\ &= 1.51 \times 10^{-4} \end{aligned}$$

$$\begin{aligned} 51C-20 &= 0.286 \\ &= 2.86 \times 10^{-1} \end{aligned}$$

$$\begin{aligned} 51C-21 &= -30.4 \\ &= -3.04 \times 10^1 \end{aligned}$$

$$\begin{aligned} 51C-22 &= 0.855 \\ &= 8.55 \times 10^{-1} \end{aligned}$$

$$\begin{aligned} 51C-23 &= 0.000266 \\ &= 2.66 \times 10^{-4} \end{aligned}$$

$$\begin{aligned} 51C-24 &= 54 \\ &\text{Integer Answer} \end{aligned}$$

$$\begin{aligned} 51C-25 &= 905 \\ &= 9.05 \times 10^2 \end{aligned}$$

$$\begin{aligned} 51C-26 &= 432 \\ &\text{Integer Answer} \end{aligned}$$

$$51C-27 = -1.68 \times 10^6$$

$$51C-28 = 1.12 \times 10^{-11}$$

$$51C-29 = 1.28 \times 10^{-7}$$

$$\begin{aligned} 51C-30 &= 131 \\ &= 1.31 \times 10^2 \end{aligned}$$

$$\begin{aligned} 51C-31 &= 250 \\ &= 2.50 \times 10^2 \end{aligned}$$

$$51C-32 = -9.38 \times 10^{-9}$$

$$\begin{aligned} 51C-33 &= 0.582 \\ &= 5.82 \times 10^{-1} \end{aligned}$$

$$\begin{aligned} 51C-34 &= -10.6 \\ &= -1.06 \times 10^1 \end{aligned}$$

$$\begin{aligned} 51C-35 &= 12.5 \\ &= 1.25 \times 10^1 \end{aligned}$$

$$\begin{aligned} 51C-36 &= 34.0 \\ &= 3.40 \times 10^1 \end{aligned}$$

$$\begin{aligned} 51C-37 &= 0.0000417 \\ &= 4.17 \times 10^{-5} \end{aligned}$$

$$\begin{aligned} 51C-38 &= 39.6 \\ &= 3.96 \times 10^1 \end{aligned}$$

## 2021 UIL MS Calculator Test C Answer Key

51C-39 = 121 = $1.21 \times 10^2$	51C-51 = $1.61 \times 10^6$	51C-61 = $2.60 \times 10^{-6}$	51C-73 = 13.5 = $1.35 \times 10^1$
51C-40 = $2.65 \times 10^7$	51C-52 = 1250 = $1.25 \times 10^3$	51C-62 = 5750 = $5.75 \times 10^3$	51C-74 = 0.332 = $3.32 \times 10^{-1}$
51C-41 = $1.88 \times 10^{10}$	51C-53 = $1.26 \times 10^9$	51C-63 = 257000 = $2.57 \times 10^5$	51C-75 = -0.590 = $-5.90 \times 10^{-1}$
51C-42 = 22.8 = $2.28 \times 10^1$	51C-54 = -836000 = $-8.36 \times 10^5$	51C-64 = -219 = $-2.19 \times 10^2$	51C-76 = $-6.01 \times 10^{-5}$
51C-43 = 1.10 = $1.10 \times 10^0$	51C-55 = 6000 = $6.00 \times 10^3$	51C-65 = 35.6 = $3.56 \times 10^1$	51C-77 = 0.941 = $9.41 \times 10^{-1}$
51C-44 = $3.34 \times 10^{13}$	51C-56 = 0.129 = $1.29 \times 10^{-1}$	51C-66 = -0.332 = $-3.32 \times 10^{-1}$	51C-78 = 1.42 = $1.42 \times 10^0$
51C-45 = 6.28 = $6.28 \times 10^0$	51C-57 = -1.21 = $-1.21 \times 10^0$	51C-67 = -0.0436 = $-4.36 \times 10^{-2}$	51C-79 = 229000 = $2.29 \times 10^5$
51C-46 = 0.0765 = $7.65 \times 10^{-2}$	51C-58 = 2.14 = $2.14 \times 10^0$	51C-68 = -0.398 = $-3.98 \times 10^{-1}$	51C-80 = -0.286 = $-2.86 \times 10^{-1}$
51C-47 = 86.4 = $8.64 \times 10^1$	51C-59 = 6.16 = $6.16 \times 10^0$	51C-69 = $8.75 \times 10^{-5}$	
51C-48 = 377 = $3.77 \times 10^2$	51C-60 = 5.53 = $5.53 \times 10^0$	51C-70 = 113 = $1.13 \times 10^2$	
51C-49 = $1.08 \times 10^{10}$		51C-71 = 35.7 = $3.57 \times 10^1$	
51C-50 = 0.144 = $1.44 \times 10^{-1}$		51C-72 = -3.50 = $-3.50 \times 10^0$	

CONTESTANT NUMBER:

**FOR GRADER USE ONLY**

Test/Tiebreaker (#correct)

\_\_\_\_ / \_\_\_\_ Initials \_\_\_\_

\_\_\_\_ / \_\_\_\_ Initials \_\_\_\_

Papers contending to place:

\_\_\_\_ / \_\_\_\_ Initials \_\_\_\_



**University Interscholastic League  
A+ Chess Puzzle Contest • Answer Sheet**

*Write your contestant number in the upper right corner, and circle your grade below.*

**Circle Grade Level:    2    3    4    5    6    7    8**

**Test** (*circle only one answer for each question*)

1.    a    b    c    d

2.    a    b    c    d

3.    a    b    c    d

4.    a    b    c    d

5.    a    b    c    d

6.    a    b    c    d

7.    a    b    c    d

8.    a    b    c    d

9.    a    b    c    d

10.   a    b    c    d

11.   a    b    c    d

12.   a    b    c    d

13.   a    b    c    d

14.   a    b    c    d

15.   a    b    c    d

16.   a    b    c    d

17.   a    b    c    d

18.   a    b    c    d

19.   a    b    c    d

20.   a    b    c    d

*Questions  
#17- 20  
only for  
Grades 4-8*

**Tiebreaker** (*circle only one answer for each question*)

1.    a    b    c    d

2.    a    b    c    d

3.    a    b    c    d

4.    a    b    c    d

5.    a    b    c    d

6.    a    b    c    d

7.    a    b    c    d

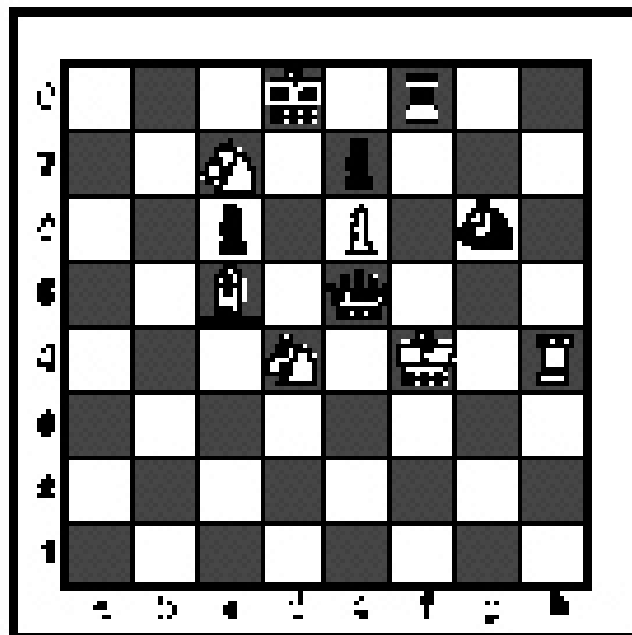
8.    a    b    c    d

# INVITATIONAL 2020-2021

## A+ ACADEMICS



University Interscholastic League



# Chess Puzzle Solving






grades 2 & 3

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

## How to read and answer questions on this test

- To answer the questions on this test, you'll need to know how to read chess moves. It's simple to do.
- Every square on the board has an "address" made up of a letter and a number.

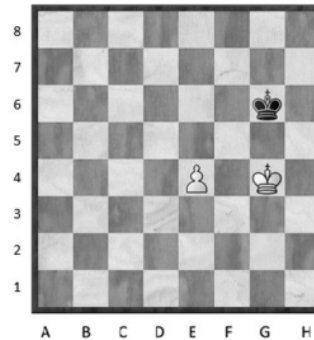


Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	
Queen	
Rook	
Bishop	
Knight	
Pawn	<b>a-h</b> (We write the file it's on.)

- To make them easy to read, the questions on this test use the figurine piece symbols on the right, above.
- When answering the puzzle questions, remember that white pawns move "up" the diagrams. Black pawns move "down" the diagrams.

At right are two sample moves.

If you look closely at the diagrams in the questions below, you'll see that the frame around the diagram labels the ranks (1-8) and files (a-h) to help you.



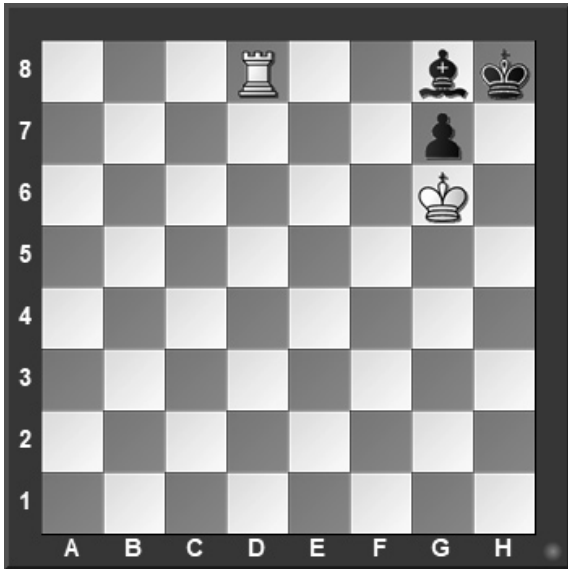
White has just played **e4**.



Black has just played ... **Nf6**.



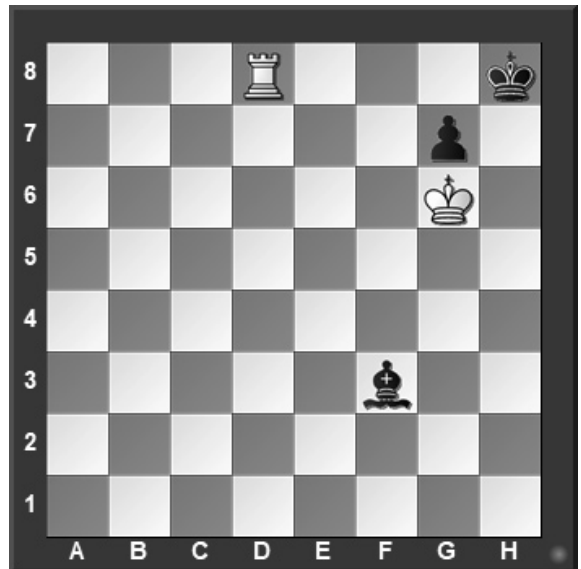
#1. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

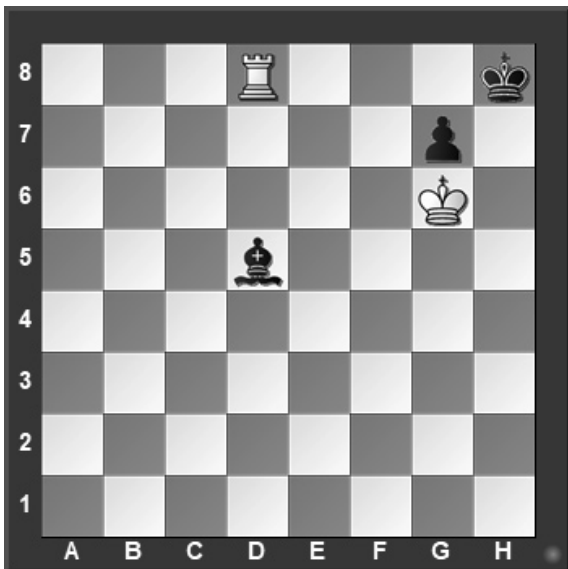
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

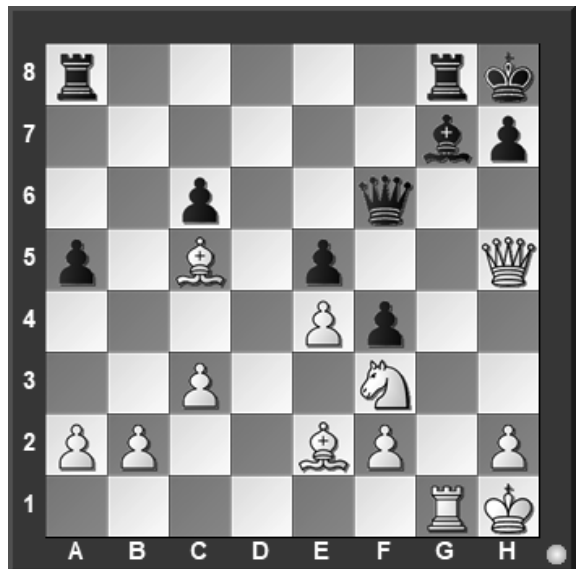
#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
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- c) Black is in check.
- d) None of the above.

#4. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It's even.
- d) It's not possible to tell.

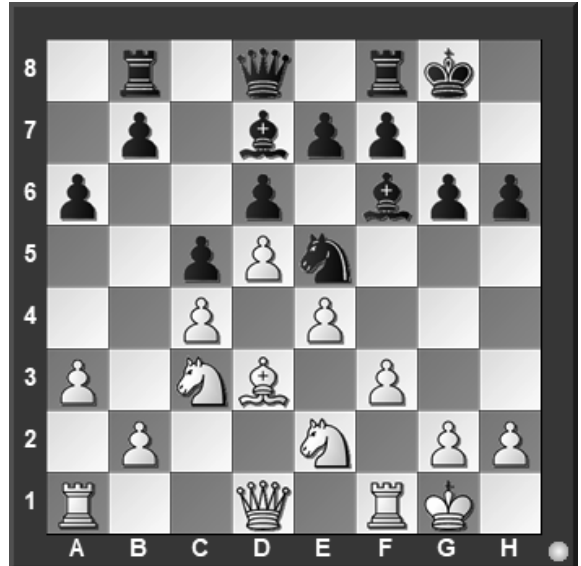
#5. White to move



Which move is possible for White?

- a) Short Castle.
- b) Long Castle.
- c) To capture the bishop.
- d) To capture the knight.

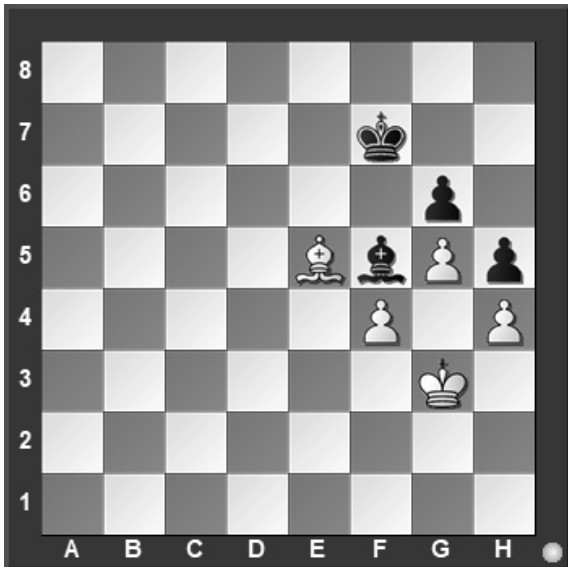
#6. White to move



Black just played c7 to c5. Which pawn can be captured?

- a) Black's c-pawn.
- b) Black's d-pawn.
- c) Black's e-pawn.
- d) White can't capture a pawn.

#7. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

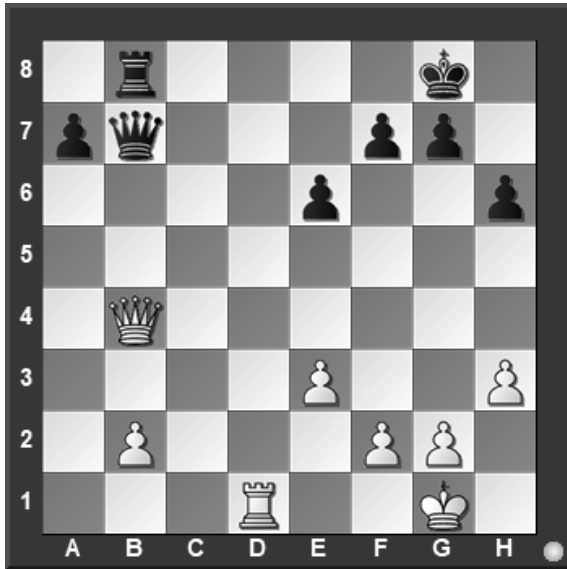
#8. White to move



What piece should White capture?

- a) Queen
- b) Rook
- c) Knight
- d) pawn

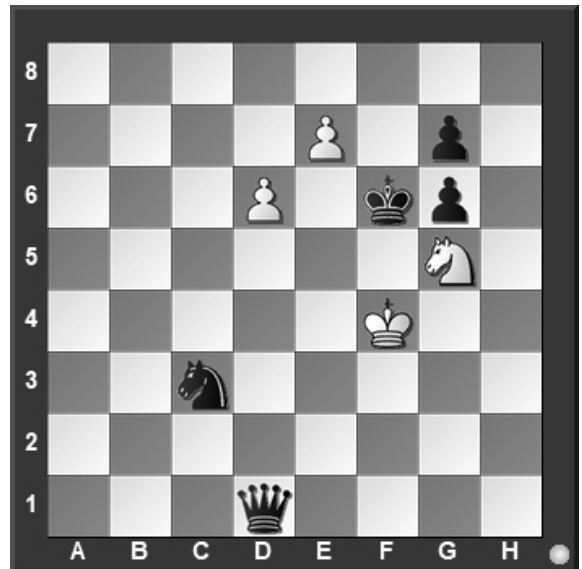
#9. White to move



What is White's best move?

- a) ♔×b7
- b) ♖d8
- c) ♕d4
- d) ♕a4

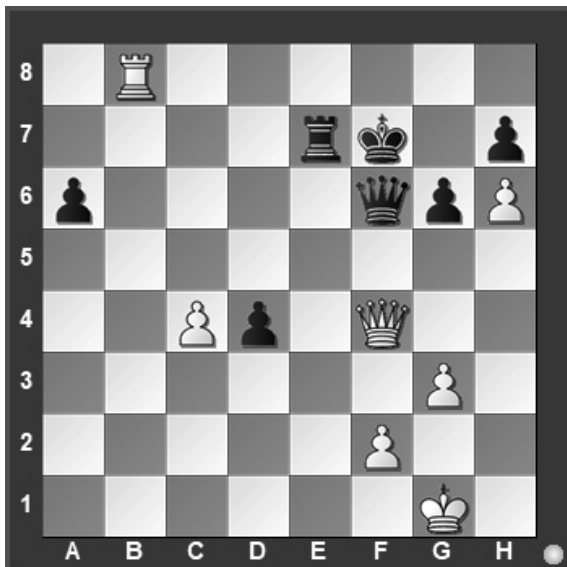
#10. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Knight
- d) Bishop

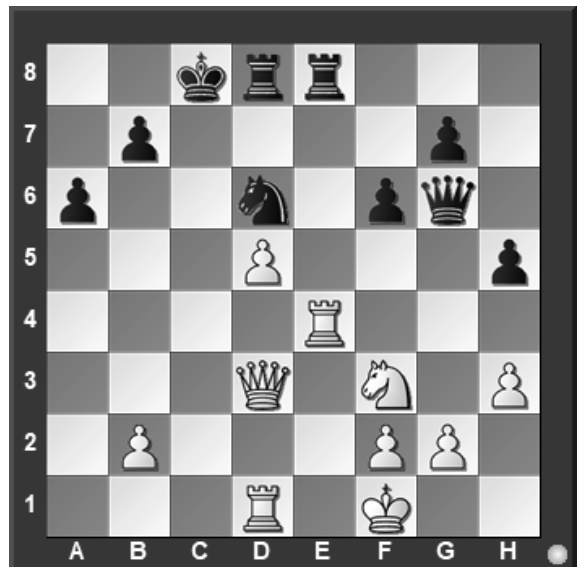
#11. White to move



What is White's best move?

- a) ♕×f6
- b) ♖f8
- c) ♕d2
- d) ♖d8

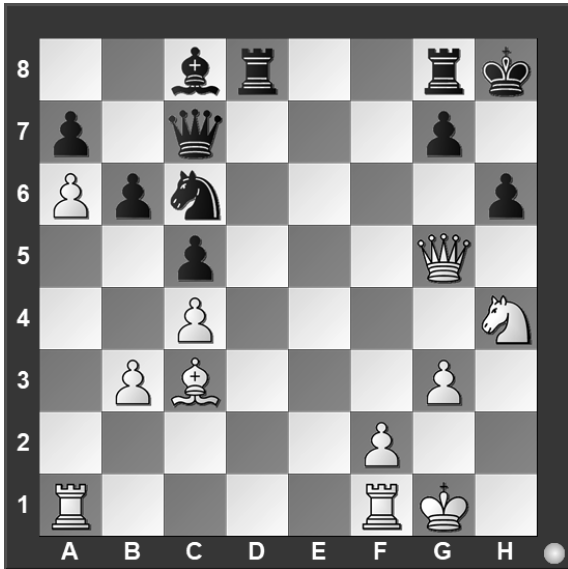
#12. White to move



What is White's best move?

- a) ♖c4
- b) ♖×e8
- c) ♕c3
- d) ♖e6

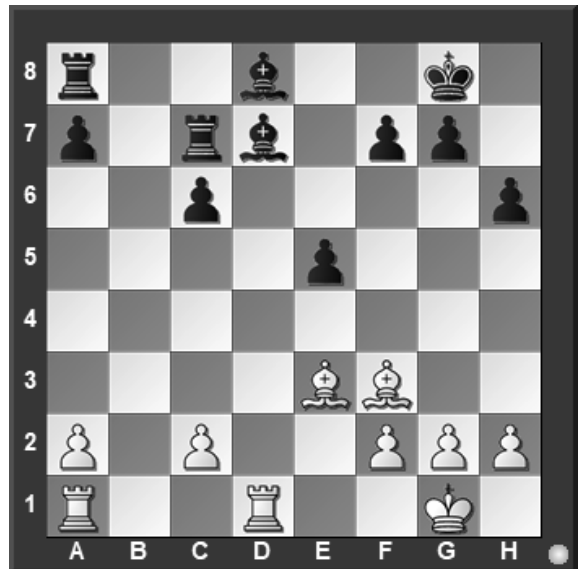
#13. White to move



If White can checkmate Black in one move, what is the checkmating move?

- a) ♔×h6
- b) ♔×g7
- c) ♕×g7
- d) ♖g6

#14. White to move



What is White's best move?

- a) ♖×d7
- b) ♕c5
- c) ♖ab1
- d) ♖d6

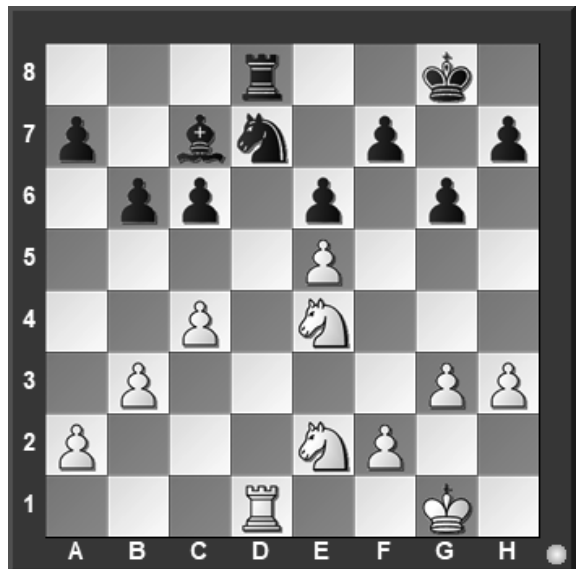
#15. White to move



What is White's best move?

- a) ♖×f8
- b) ♕h7
- c) ♕×c6
- d) ♖b1

#16. White to move



What is White's best move?

- a) ♖×d7
- b) ♖f6
- c) ♖d6
- d) ♖d3



**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Invitational — Grades 2 & 3**

**ANSWER KEY**

**Test**

- |      |       |
|------|-------|
| 1. B | 11. B |
| 2. A | 12. A |
| 3. C | 13. A |
| 4. A | 14. A |
| 5. D | 15. B |
| 6. A | 16. A |
| 7. C |       |
| 8. B |       |
| 9. B |       |
| 10.C |       |

**Tiebreaker**

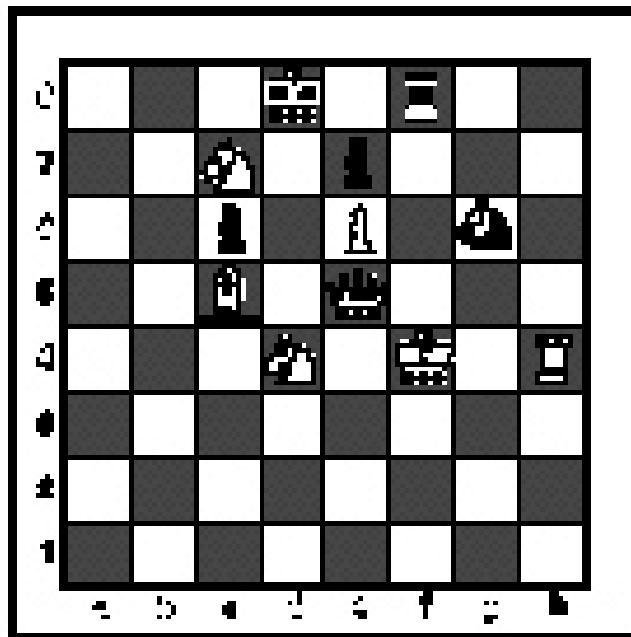
- |      |      |
|------|------|
| 1. D | 5. B |
| 2. A | 6. B |
| 3. A | 7. B |
| 4. A | 8. D |

# INVITATIONAL 2020-2021

## A+ ACADEMICS



University Interscholastic League



# Chess Puzzle Solving

grades 4 & 5

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

## How to read and answer questions on this test

- To answer the questions on this test, you'll need to know how to read chess moves. It's simple to do.
- Every square on the board has an "address" made up of a letter and a number.

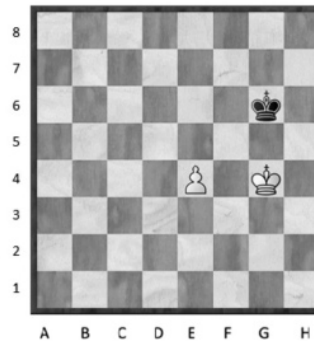


Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	
Queen	
Rook	
Bishop	
Knight	
Pawn	<b>a-h</b> (We write the file it's on.)

- To make them easy to read, the questions on this test use the figurine piece symbols on the right, above.
- When answering the puzzle questions, remember that white pawns move "up" the diagrams. Black pawns move "down" the diagrams.

At right are two sample moves.

If you look closely at the diagrams in the questions below, you'll see that the frame around the diagram labels the ranks (1-8) and files (a-h) to help you.

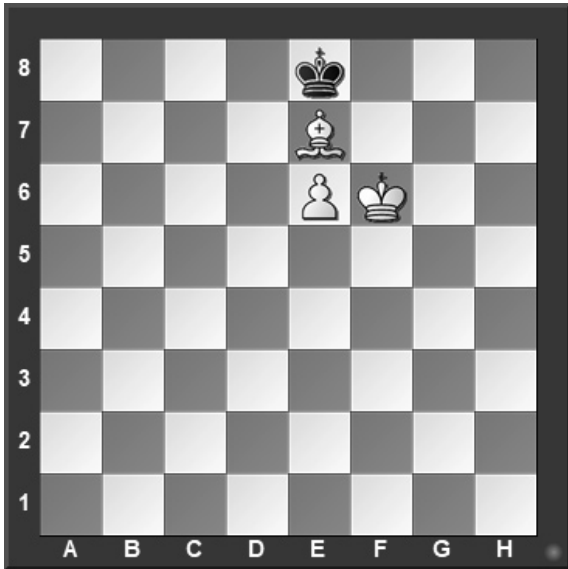


White has just played **e4**.



Black has just played ... **Nf6**.

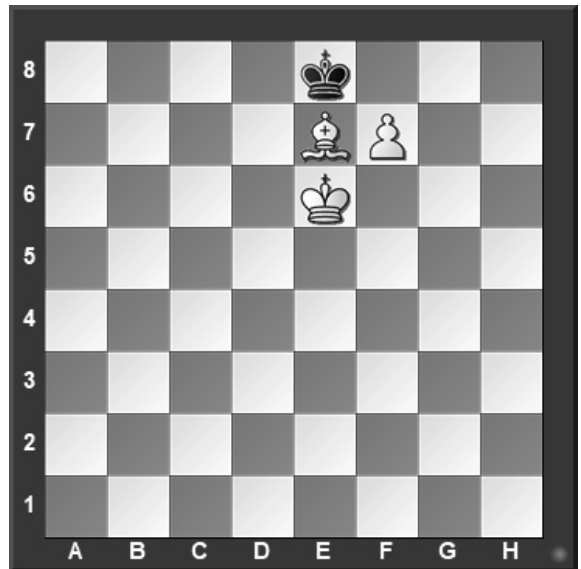
#1. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

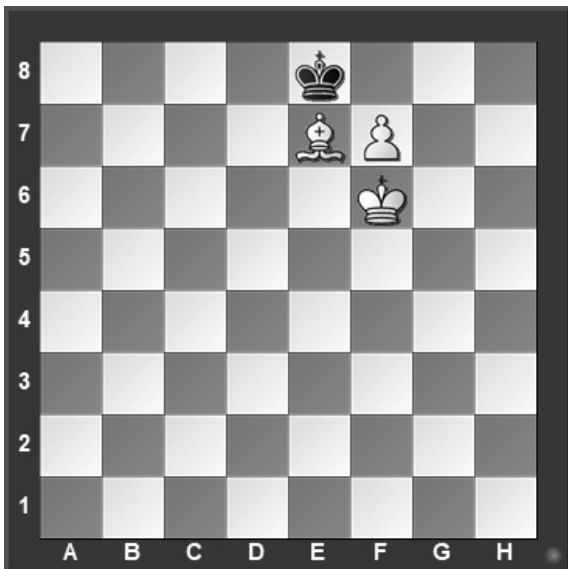
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

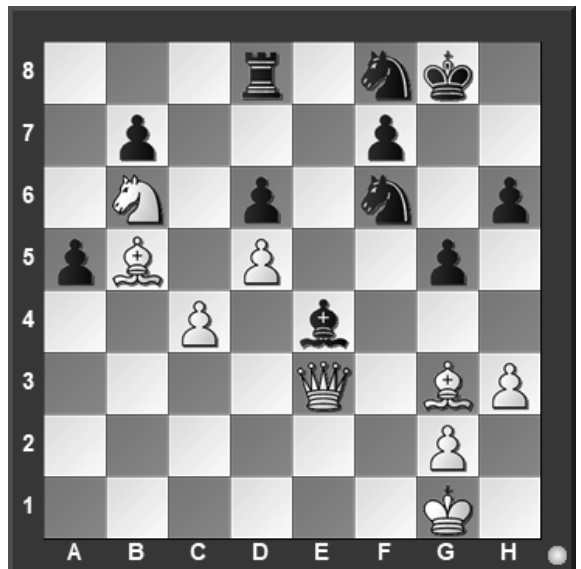
#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

#4. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It's even.
- d) It's not possible to tell.



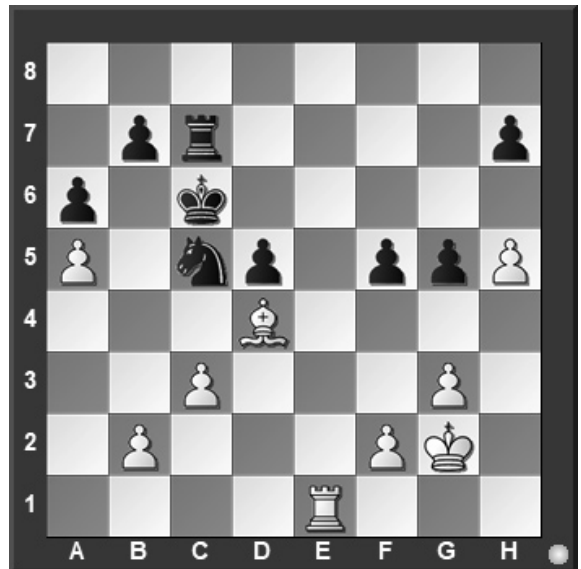
#5. White to move



Which move is possible for White?

- a) Short Castle .
- b) Long Castle.
- c) To capture the queen.
- d) To capture the pawn.

#6. White to move



Black just played g7 to g5. Which pawn can be captured?

- a) Black's h-pawn.
- b) Black's g-pawn.
- c) Black's f-pawn.
- d) White can't capture a pawn.

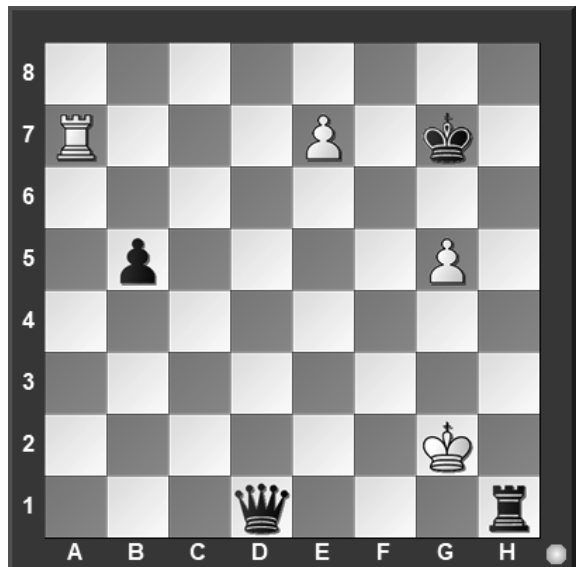
#7. White to move



How many moves does it take to check-mate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate.

#8. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Bishop
- d) Knight

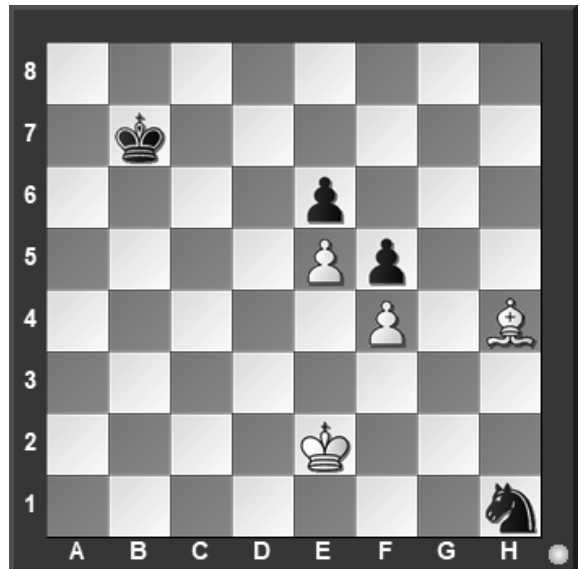
#9. White to move



What piece should White capture?

- a) Queen
- b) Bishop
- c) Knight
- d) pawn

#10. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

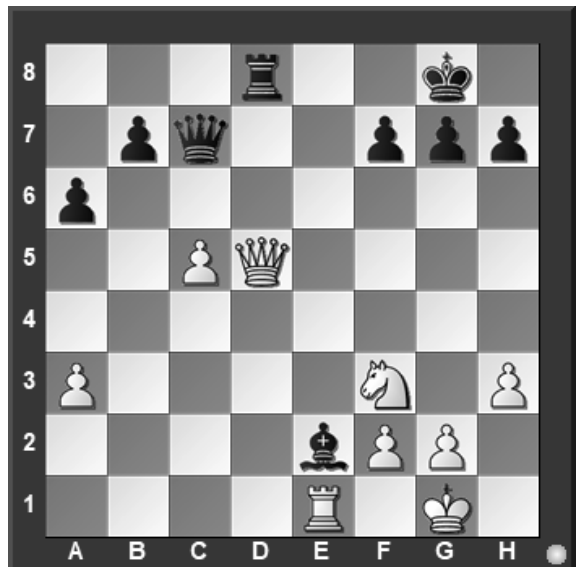
#11. White to move



What is White's best move?

- a) ♔×b6
- b) ♔×a4
- c) f×g5
- d) f5

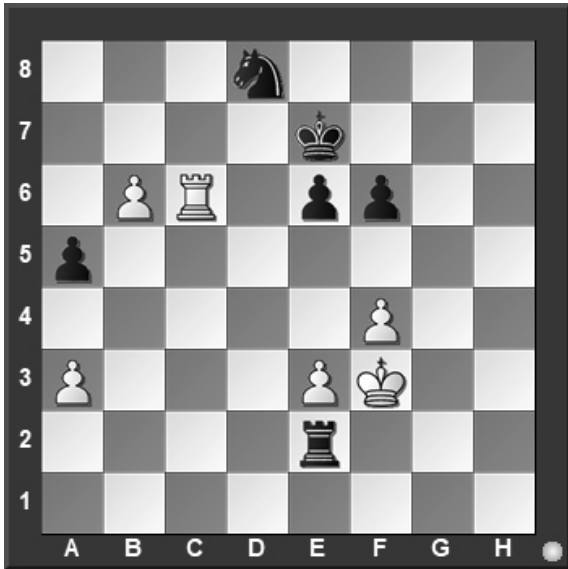
#12. White to move



What is White's best move?

- a) ♔×d8
- b) ♔e4
- c) ♖×e2
- d) ♔b3

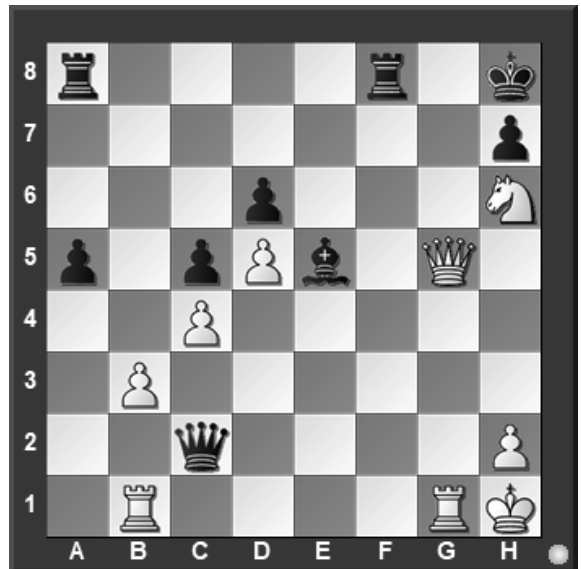
#13. White to move



What is White's best move?

- a) ♖c7
- b) ♖c8
- c) ♜×e2
- d) b7

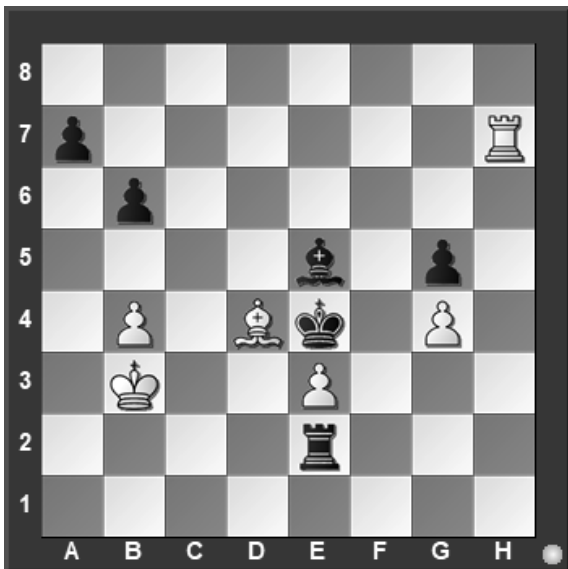
#14. White to move



If White can checkmate Black in two moves, what is the *first* move?

- a) ♘f7
- b) ♜g8
- c) ♜×e5
- d) ♖bf1

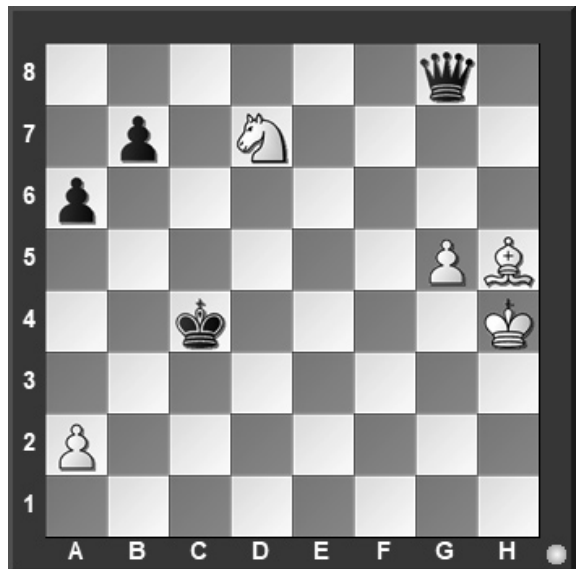
#15. White to move



What is White's best move?

- a) ♖×a7
- b) ♖e7
- c) ♙×e5
- d) ♖h5

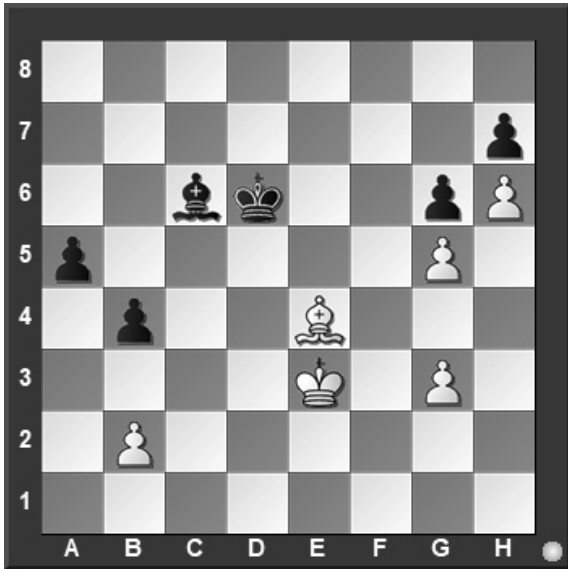
#16. White to move



What is White's best move?

- a) ♙f7
- b) ♙e2
- c) ♘f6
- d) ♘e5

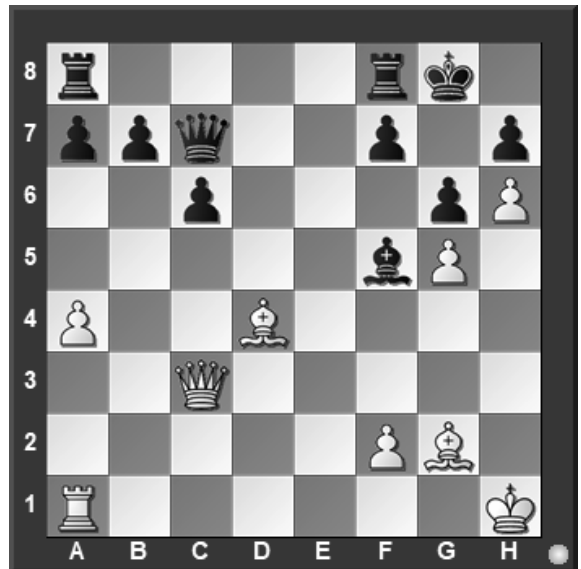
#17. White to move



What is White's best move?

- a)  $\text{Q} \times \text{c6}$
- b)  $\text{Q} \times \text{g6}$
- c)  $\text{Q} \text{d3}$
- d)  $\text{Q} \text{b1}$

#18. White to move



What is White's best move?

- a)  $\text{Q} \text{h8}$
- b)  $\text{Q} \text{c5}$
- c)  $\text{Q} \text{b6}$
- d)  $\text{Q} \times \text{a7}$

#19. White to move



What is White's best move?

- a)  $\text{Q} \times \text{a5}$
- b)  $\text{Q} \text{a3}$
- c)  $\text{R} \text{a1}$
- d)  $\text{Q} \text{c5}$

#20. White to move



What is White's best move?

- a)  $\text{R} \times \text{f7}$
- b)  $\text{R} \text{bf1}$
- c)  $\text{e6}$
- d)  $\text{R} \text{fb2}$



**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Invitational — Grades 4 & 5**

**ANSWER KEY**

**Test**

- |      |       |
|------|-------|
| 1. B | 11. A |
| 2. A | 12. C |
| 3. C | 13. A |
| 4. A | 14. B |
| 5. C | 15. B |
| 6. B | 16. A |
| 7. B | 17. B |
| 8. A | 18. C |
| 9. D | 19. B |
| 10.A | 20. A |

**Tiebreaker**

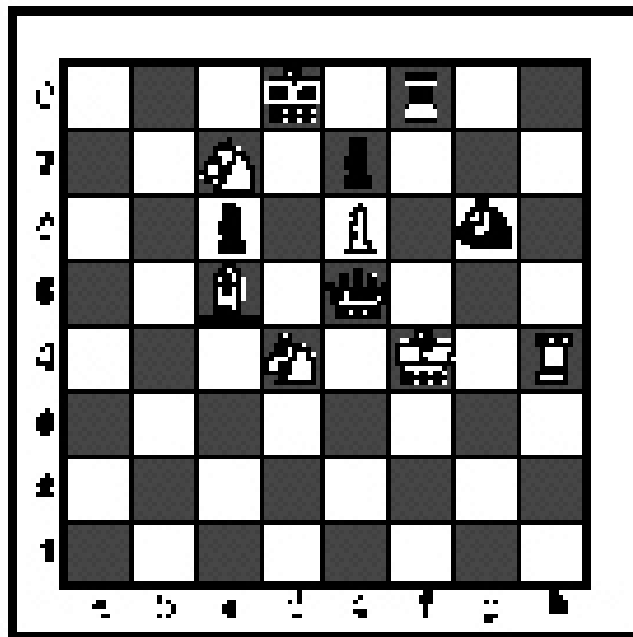
- |      |      |
|------|------|
| 1. D | 5. B |
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| 4. A | 8. D |

# INVITATIONAL 2020-2021

## A+ ACADEMICS



University Interscholastic League



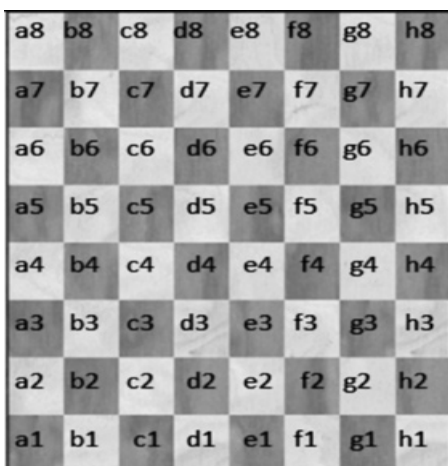
# Chess Puzzle Solving

grades 6, 7, 8

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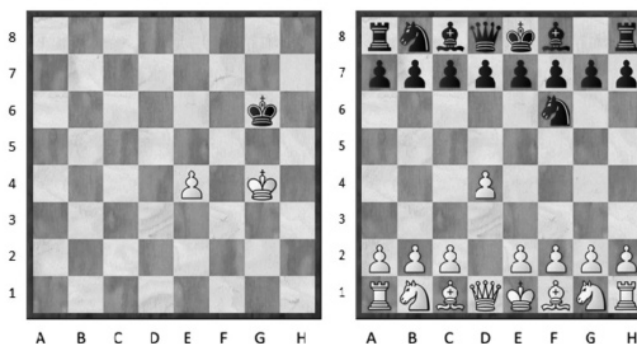


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At right are two sample moves.

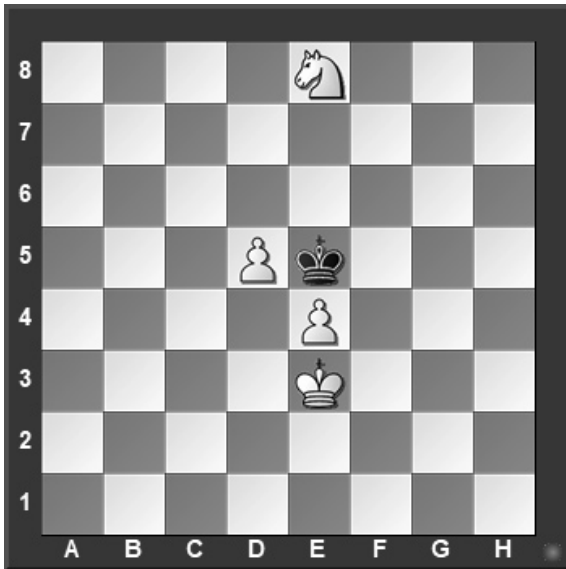
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White has just played **e4**.

Black has just played ... **Nf6**.

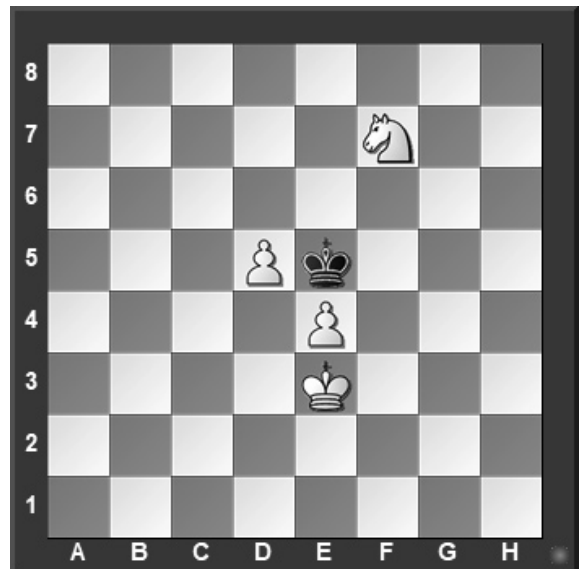
#1. Black to move



What term best describes this situation?

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- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

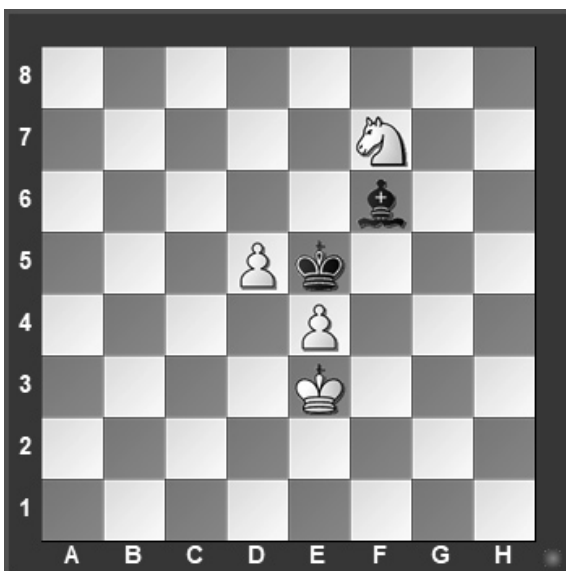
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

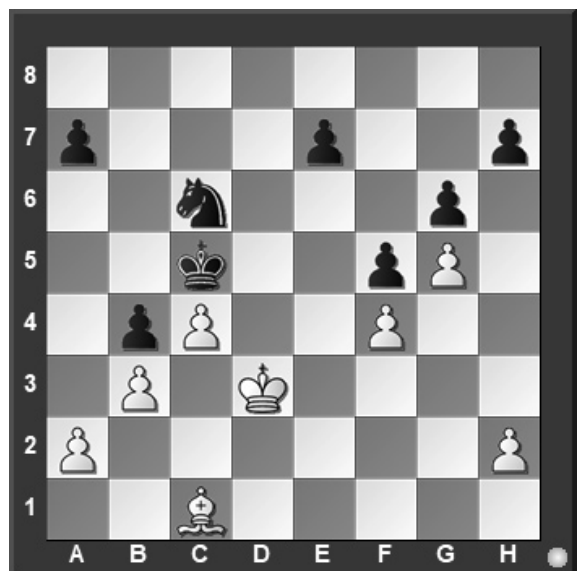
#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

#4. White to move

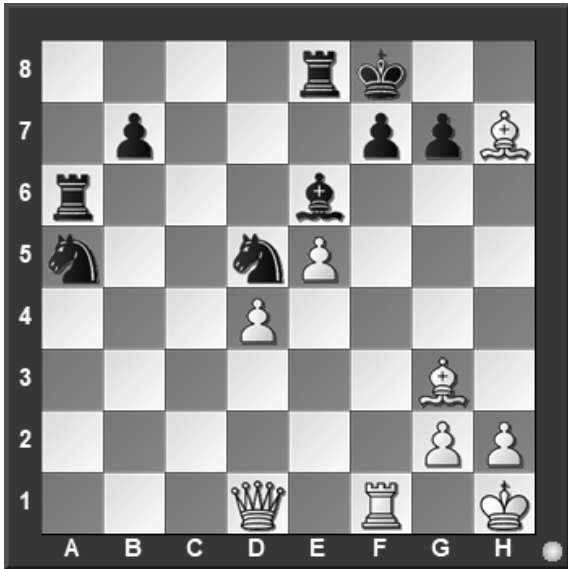


Black just played f7 to f5. Which pawn can be captured?

- a) Black's h-pawn.
- b) Black's g-pawn.
- c) Black's f-pawn.
- d) White can't capture a pawn.



#5. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It is even.
- d) It is not possible to tell.

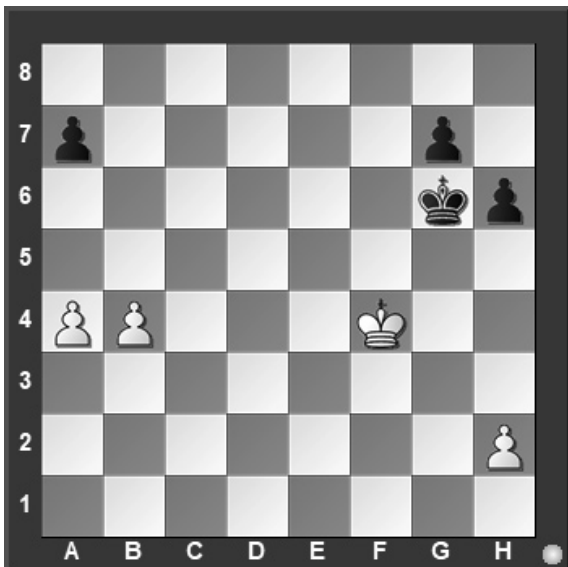
#6. White to move



Which move is possible for White?

- a) Short Castle.
- b) Long Castle.
- c) To capture the knight.
- d) To capture the bishop.

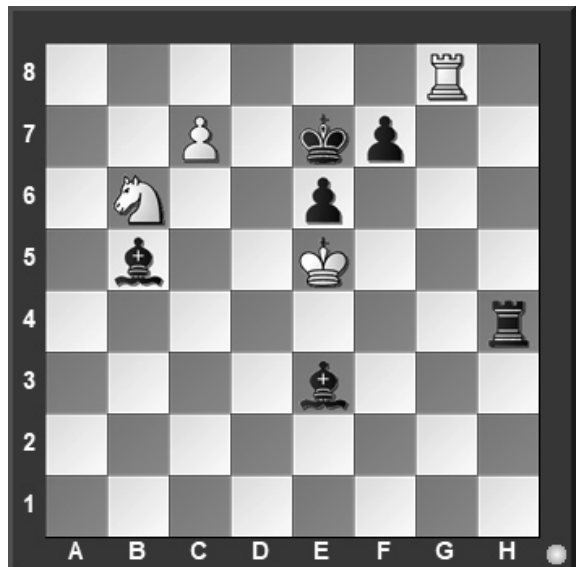
#7. White to move



What is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

#8. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Bishop
- d) Knight

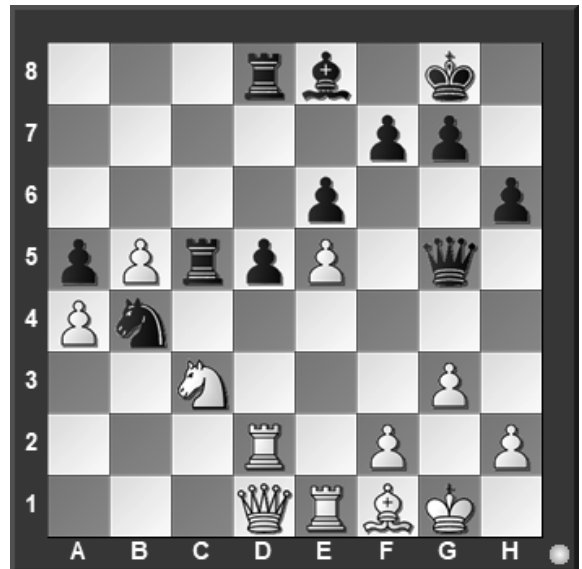
#9. White to move



If White can checkmate Black in two moves, what's the *first* move?

- a) ♖h8
- b) ♖e8
- c) ♗xg8
- d) ♗d7

#10. White to move



What is White's best move?

- a) ♗a2
- b) ♗e4
- c) f4
- d) h4

#11. White to move



What is White's best move?

- a) ♗d6
- b) ♗f6
- c) ♗c3
- d) ♕e3

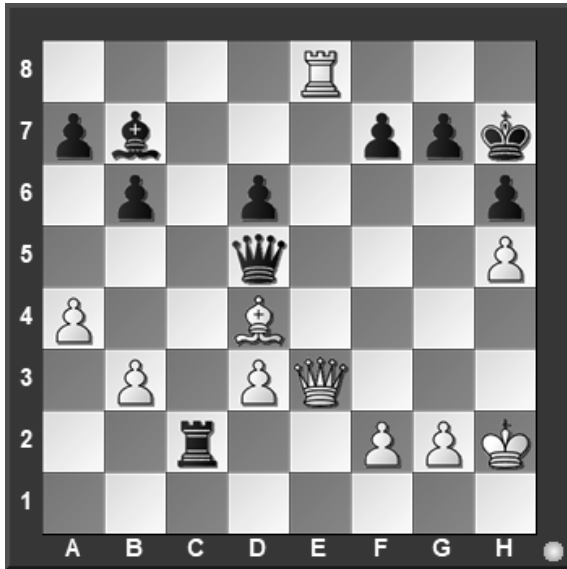
#12. White to move



What is White's best move?

- a) ♙xg6
- b) ♖fe1
- c) ♕g2
- d) ♗c4

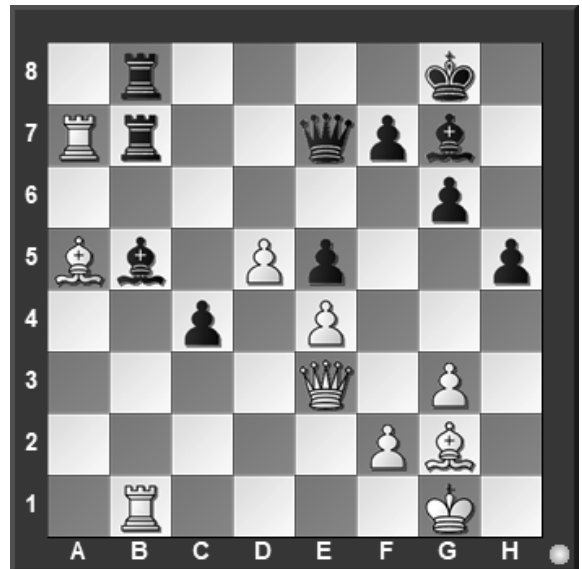
#13. White to move



If White can checkmate Black in three moves, what is the *first* move?

- a) ♔×h6
- b) ♖h8
- c) ♕e4
- d) ♗×g7

#14. White to move



What is White's best move?

- a) ♖×b7
- b) ♖×b5
- c) ♗b4
- d) ♗b6

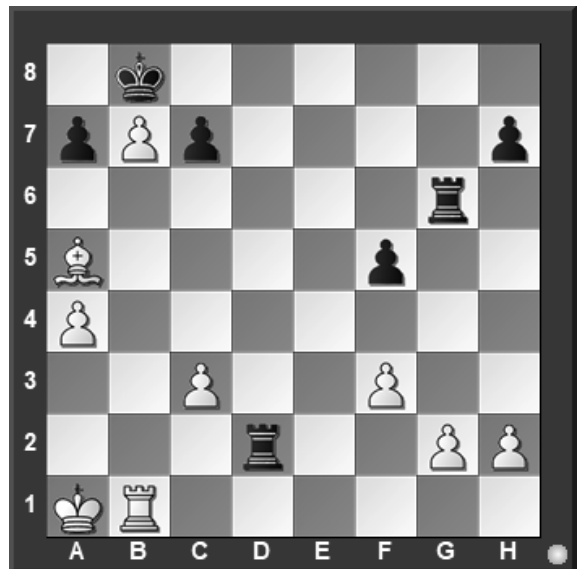
#15. White to move



What is White's best move?

- a) ♕×a4
- b) ♕×h7
- c) ♖h1
- d) ♗d5

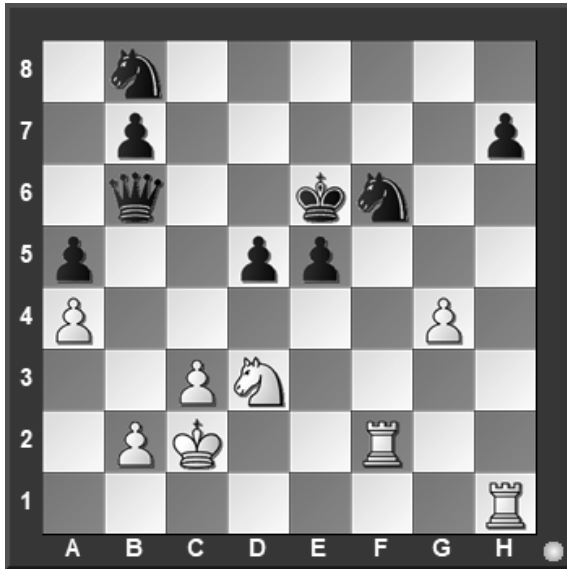
#16. White to move



What is White's best move?

- a) ♗×c7
- b) c4
- c) g4
- d) ♖e1

#17. White to move



What is White's best move?

- a) ♖h6
- b) ♖xf6
- c) ♖e2
- d) g5

#18. White to move



What is White's best move?

- a) ♖d1
- b) ♖xf7
- c) ♘xe6
- d) ♙e5

#19. White to move



How many moves does it take to checkmate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate

#20. White to move



What piece should White capture?

- a) Rook
- b) Bishop
- c) Knight
- d) Pawn



**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Invitational — Grades 6, 7, and 8  
ANSWER KEY**

**Test**

- |       |       |
|-------|-------|
| 1. B  | 11. B |
| 2. C  | 12. A |
| 3. A  | 13. B |
| 4. C  | 14. B |
| 5. A  | 15. B |
| 6. C  | 16. A |
| 7. A  | 17. B |
| 8. D  | 18. C |
| 9. B  | 19. B |
| 10. B | 20. C |

**Tiebreaker**

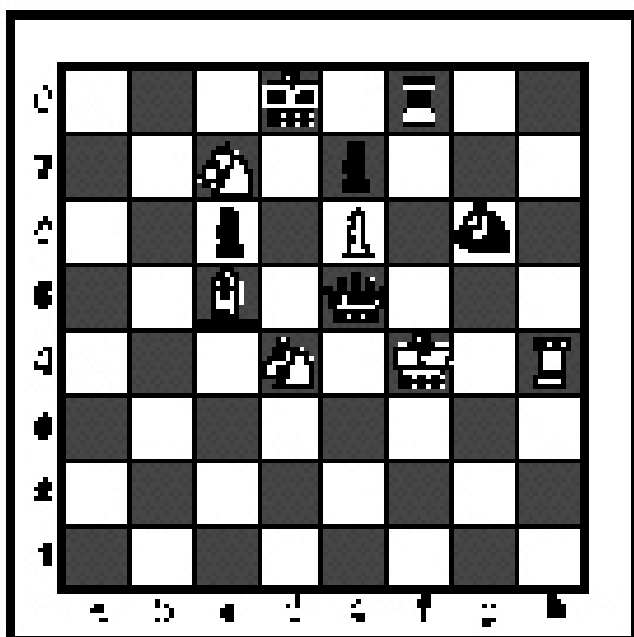
- |      |      |
|------|------|
| 1. D | 5. B |
| 2. A | 6. B |
| 3. A | 7. B |
| 4. A | 8. D |

**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League

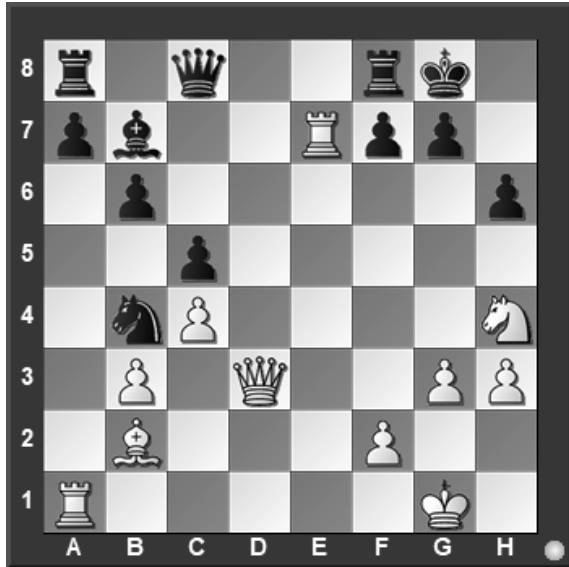


# Chess Puzzle Solving

## TIEBREAKER - ALL GRADES

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

#1. White to move



What is White's best move?

- a) ♔d6
- b) ♔d7
- c) ♔f5
- d) ♔g6

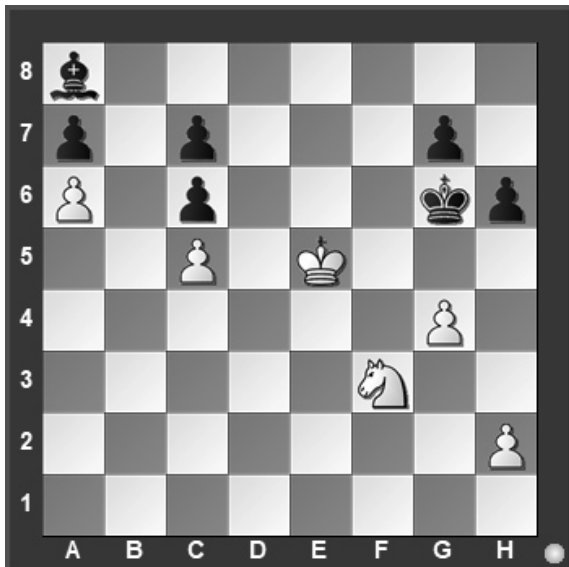
#2. White to move



If White can checkmate Black in three moves, what's the *first* move?

- a) ♔f8
- b) ♖e8
- c) ♗h6
- d) ♘c3

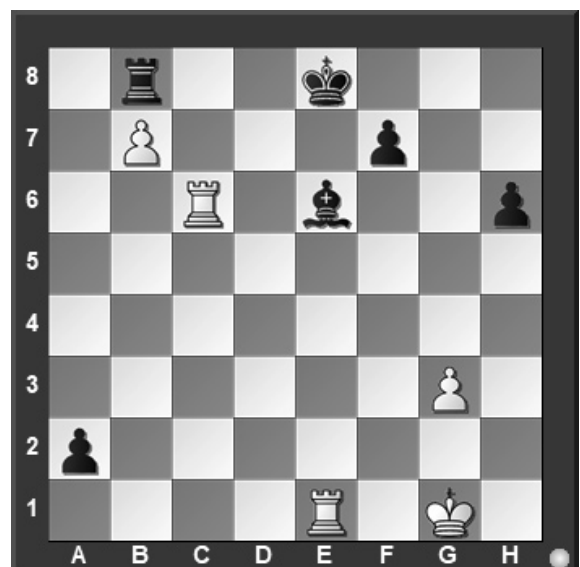
#3. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

#4. White to move



What is White's best move?

- a) ♖c8
- b) ♖a6
- c) ♖b6
- d) ♖e×e6

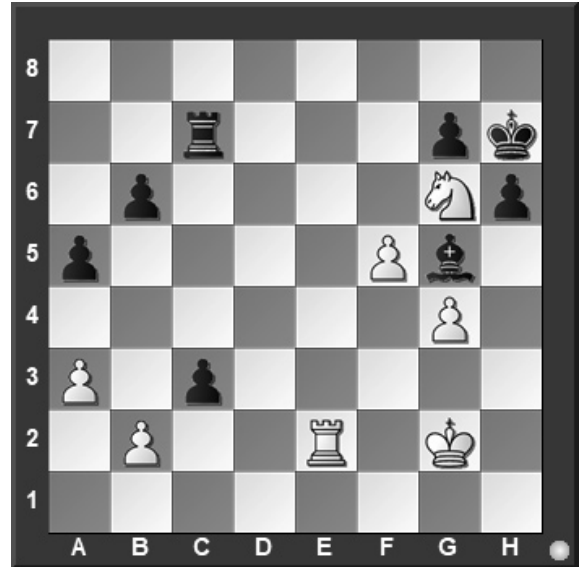
#5. White to move



How many moves does it take to checkmate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate

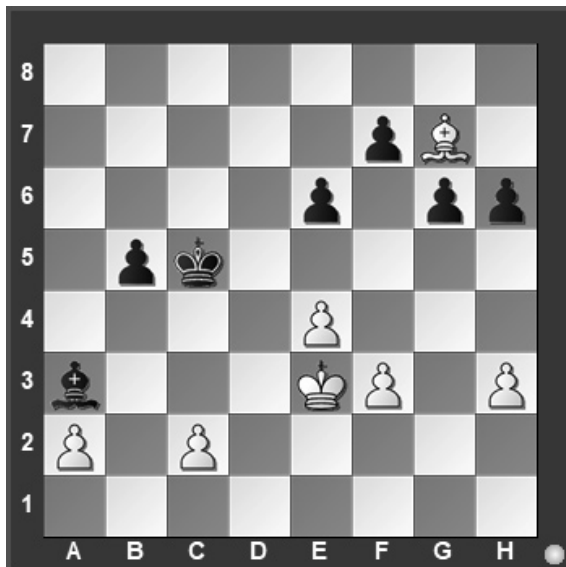
#6. White to move



What is White's best move?

- a) ♖f8
- b) ♜e8
- c) bxc3
- d) ♜c2

#7. White to move



What is White's best move?

- a) ♙xh6
- b) ♙f8
- c) ♚d3
- d) ♚d2

#8. White to move



What is White's best move?

- a) ♙xh6
- b) ♙b6
- c) ♜d6
- d) g5

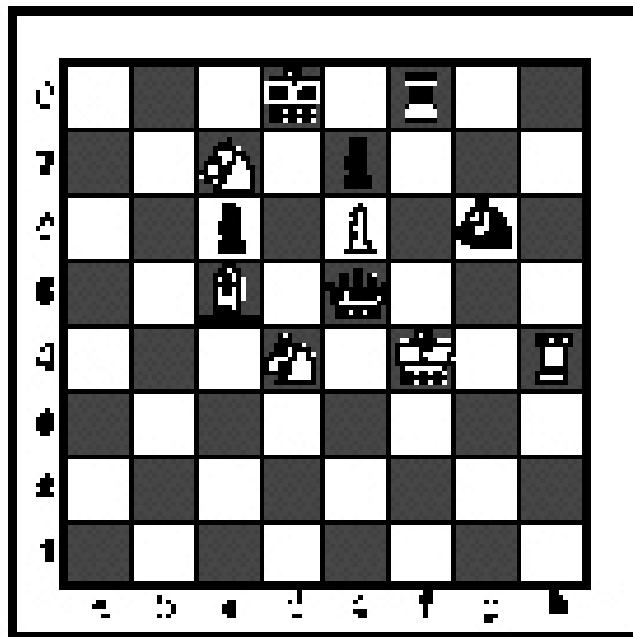


**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Chess Puzzle Solving






grades 2 & 3

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## How to read and answer questions on this test

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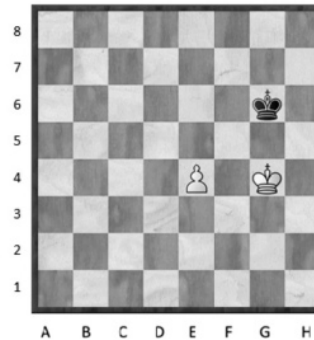


Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	
Queen	
Rook	
Bishop	
Knight	
Pawn	<b>a-h</b> (We write the file it's on.)

- To make them easy to read, the questions on this test use the figurine piece symbols on the right, above.
- When answering the puzzle questions, remember that white pawns move "up" the diagrams. Black pawns move "down" the diagrams.

At right are two sample moves.

If you look closely at the diagrams in the questions below, you'll see that the frame around the diagram labels the ranks (1-8) and files (a-h) to help you.

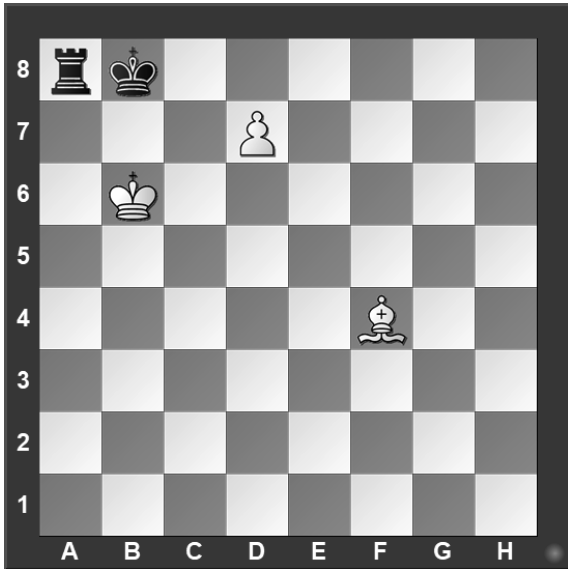


White has just played **e4**.



Black has just played ... **Nf6**.

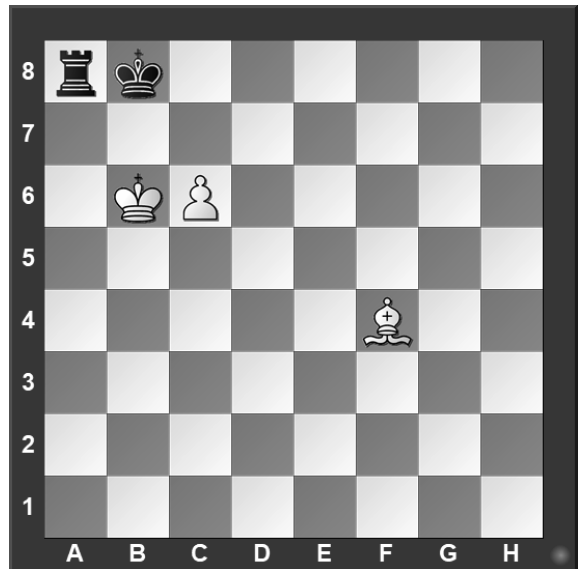
#1. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

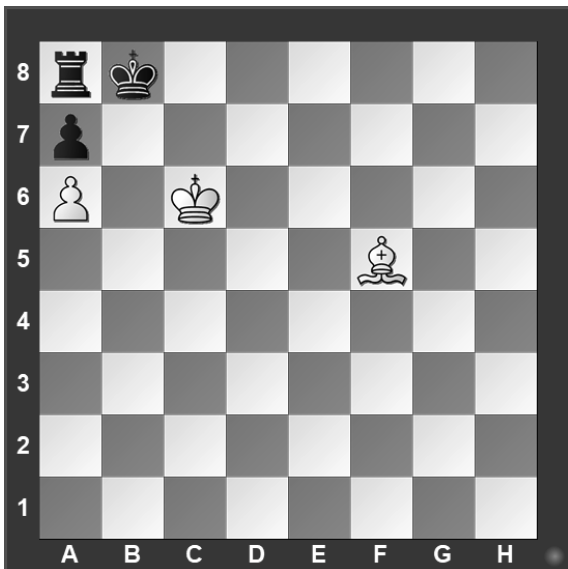
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

#3. Black to move



What term best describes this situation?

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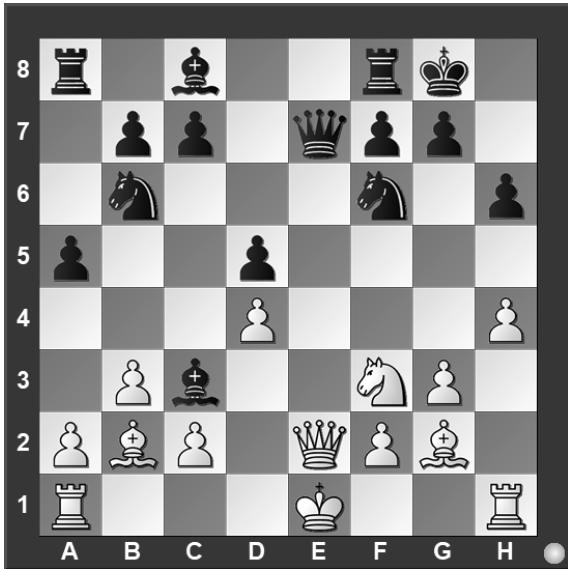
#4. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It's even.
- d) It's not possible to tell.

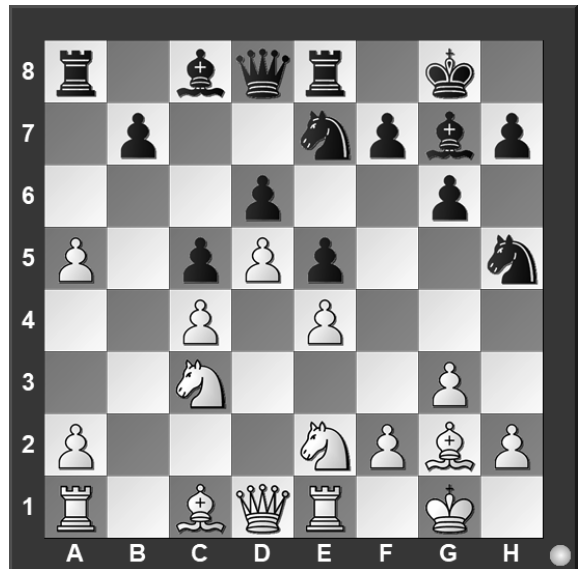
#5. White to move



Which move is possible for White?

- a) Short Castle.
- b) Long Castle.
- c) To capture the bishop.
- d) To capture the queen.

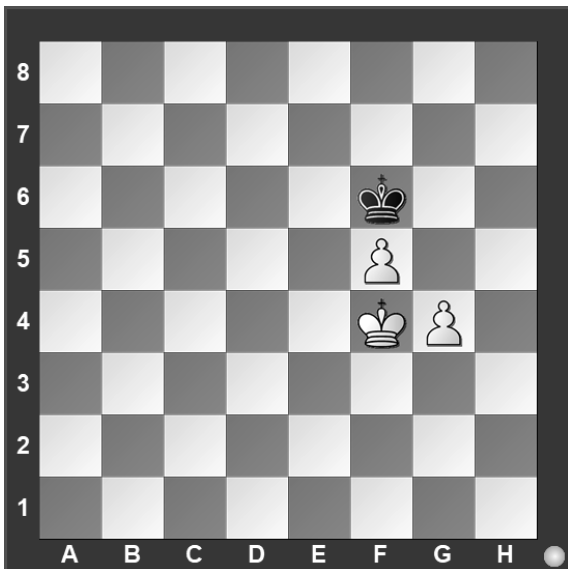
#6. White to move



Black just played c7 to c5. Which pawn can be captured?

- a) Black's e-pawn.
- b) Black's d-pawn.
- c) Black's c-pawn.
- d) White can't capture a pawn.

#7. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

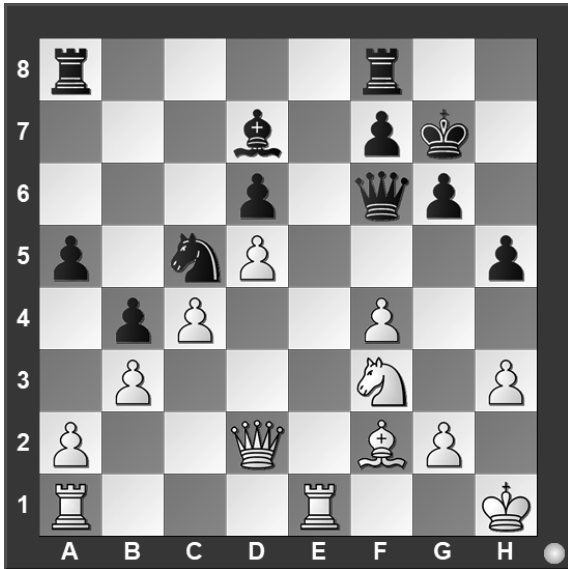
#8. White to move



What piece should White capture?

- a) Queen
- b) Bishop
- c) Knight
- d) pawn

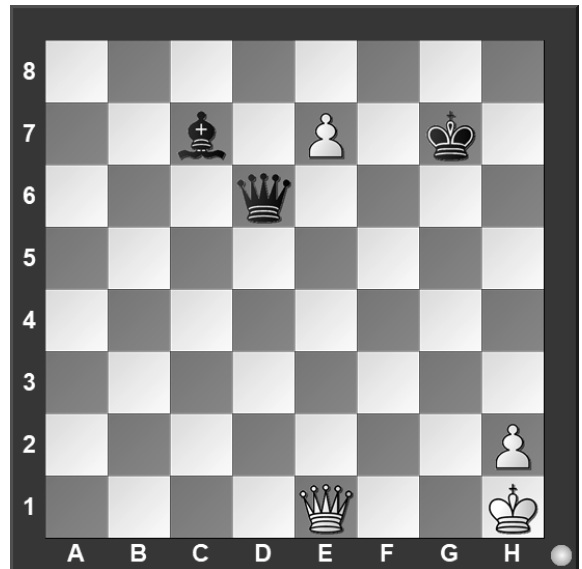
#9. White to move



What is White's best move?

- a)  $\text{Qh4}$
- b)  $\text{Qd4}$
- c)  $\text{Qxc5}$
- d)  $\text{Ng5}$

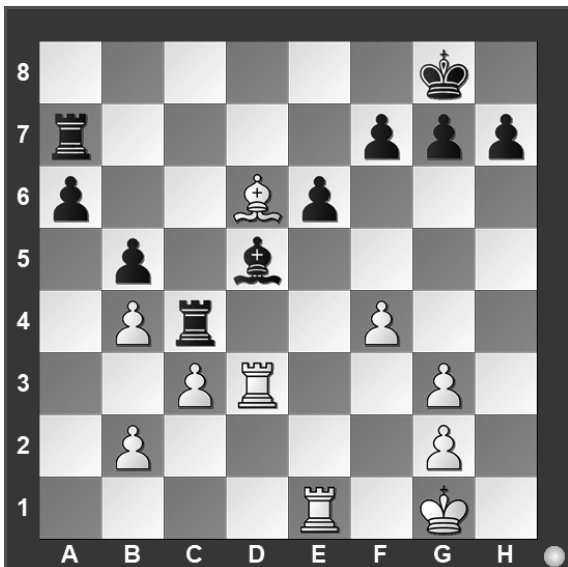
#10. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Knight
- d) Bishop

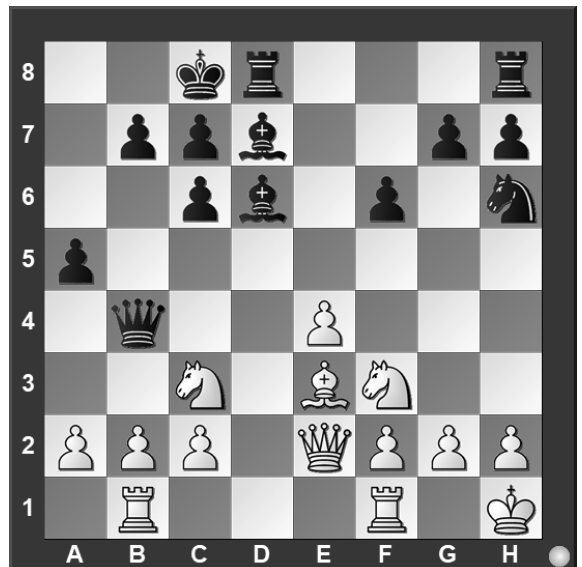
#11. White to move



What is White's best move?

- a)  $\text{Rxd5}$
- b)  $\text{b3}$
- c)  $\text{Qc5}$
- d)  $\text{Qf2}$

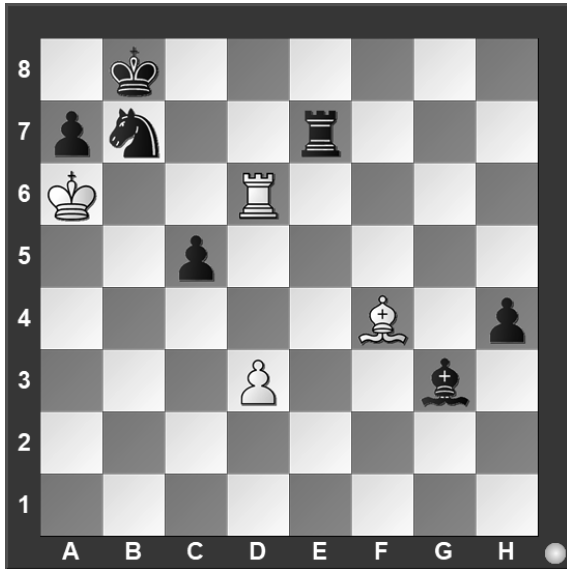
#12. White to move



What is White's best move?

- a)  $\text{Qxh6}$
- b)  $\text{a3}$
- c)  $\text{e5}$
- d)  $\text{Qd2}$

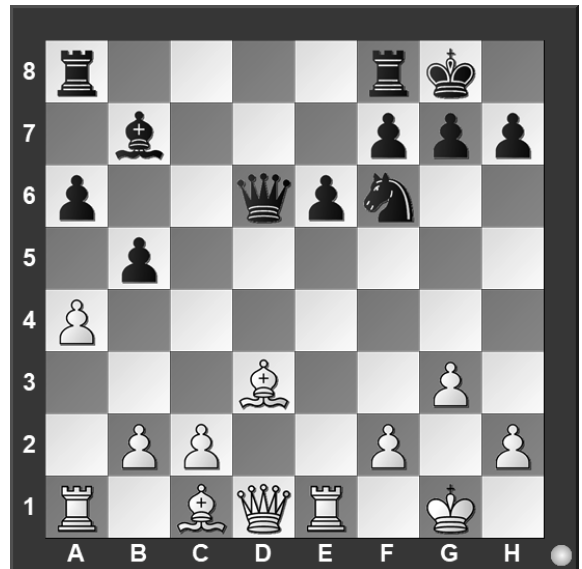
#13. White to move



If White can checkmate Black in one move, what is the checkmating move?

- a) ♖d7
- b) ♖d8
- c) ♖c6
- d) There is no checkmate

#14. White to move



What is White's best move?

- a) a×b5
- b) ♗f4
- c) ♗×h7
- d) ♗g5

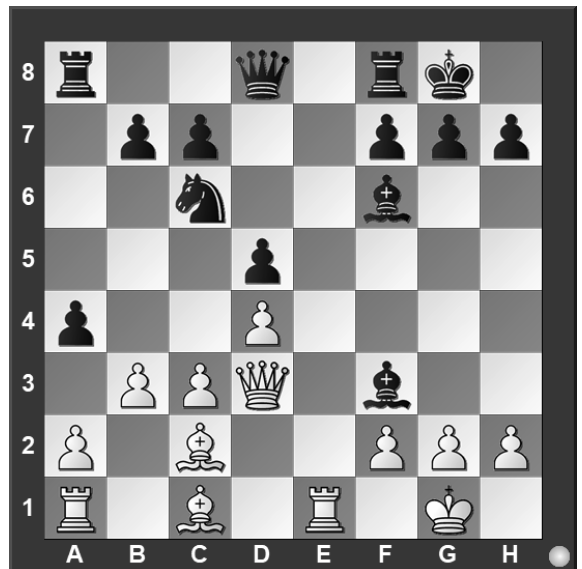
#15. White to move



What is White's best move?

- a) ♕×e7
- b) ♕×c6
- c) ♖×f8
- d) ♗×h8

#16. White to move



What is White's best move?

- a) ♕×f3
- b) g×f3
- c) ♖×h7
- d) b×a4



**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Fall/Winter — Grades 2 & 3**

**ANSWER KEY**

**Test**

- |      |       |
|------|-------|
| 1. A | 11. A |
| 2. C | 12. B |
| 3. B | 13. B |
| 4. A | 14. C |
| 5. C | 15. A |
| 6. C | 16. C |
| 7. A |       |
| 8. A |       |
| 9. B |       |
| 10.C |       |

**Tiebreaker**

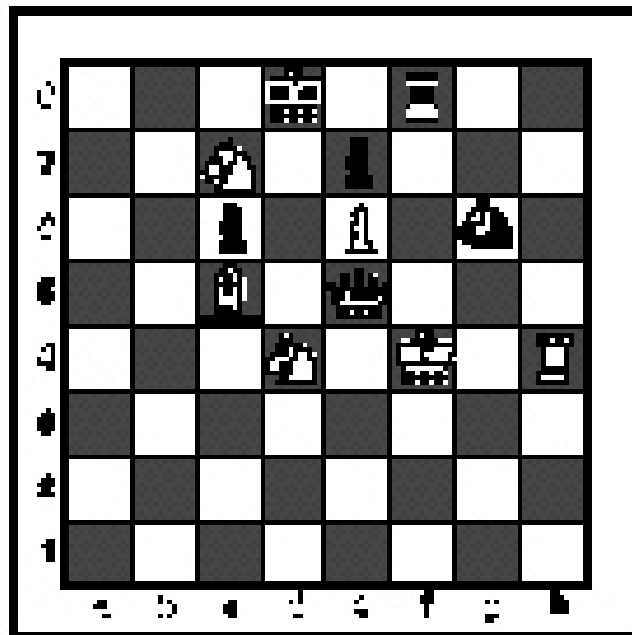
- |      |      |
|------|------|
| 1. B | 5. B |
| 2. C | 6. A |
| 3. A | 7. A |
| 4. A | 8. B |

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Chess Puzzle Solving

grades 4 & 5






**DO NOT OPEN TEST  
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- To answer the questions on this test, you'll need to know how to read chess moves. It's simple to do.
- Every square on the board has an "address" made up of a letter and a number.

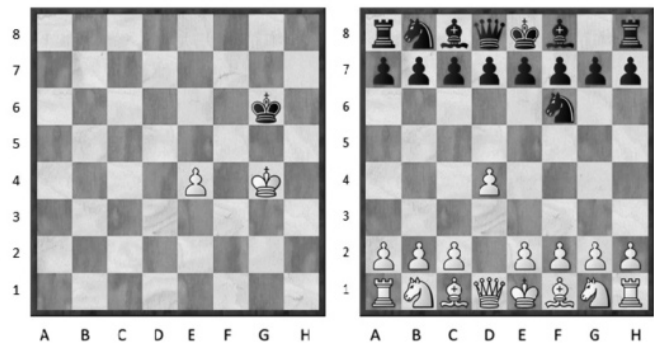


Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	
Queen	
Rook	
Bishop	
Knight	
Pawn	<b>a-h</b> (We write the file it's on.)

- To make them easy to read, the questions on this test use the figurine piece symbols on the right, above.
- When answering the puzzle questions, remember that white pawns move "up" the diagrams. Black pawns move "down" the diagrams.

At right are two sample moves.

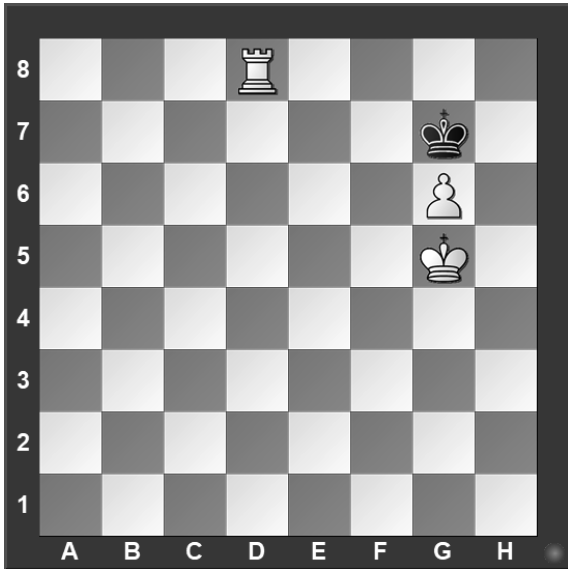
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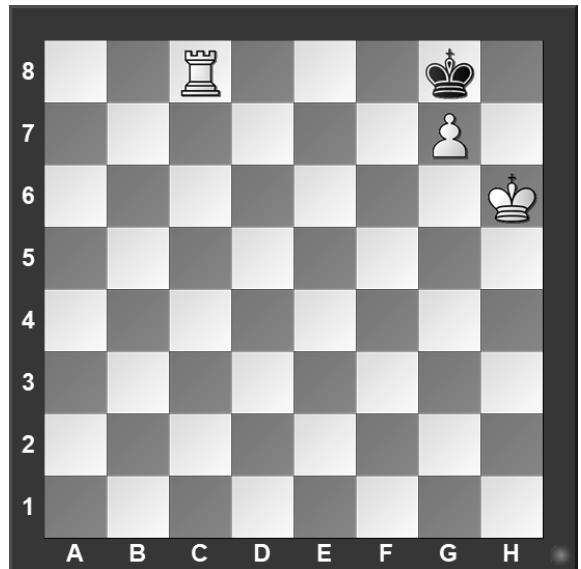
#1. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

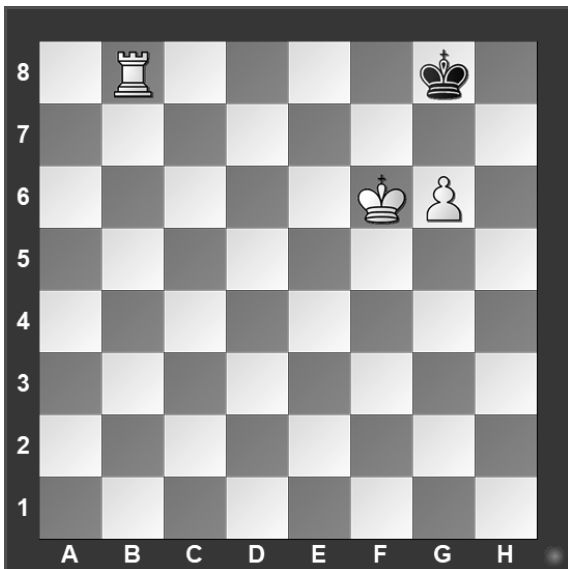
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

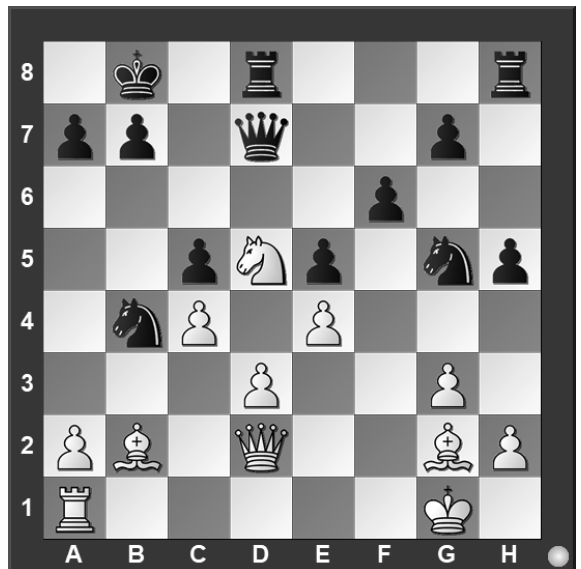
#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

#4. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It's even.
- d) It's not possible to tell.

#5. White to move



Which move is possible for White?

- a) Short Castle .
- b) Long Castle.
- c) To capture the bishop.
- d) To capture the knight.

#6. White to move



Black just played b7 to b5. Which pawn can be captured?

- a) Black's b-pawn.
- b) Black's c-pawn.
- c) Black's d-pawn.
- d) White can't capture a pawn.

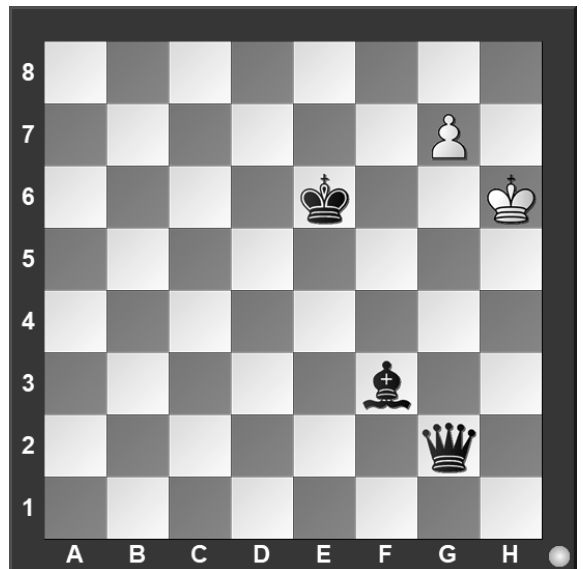
#7. White to move



How many moves does it take to checkmate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate.

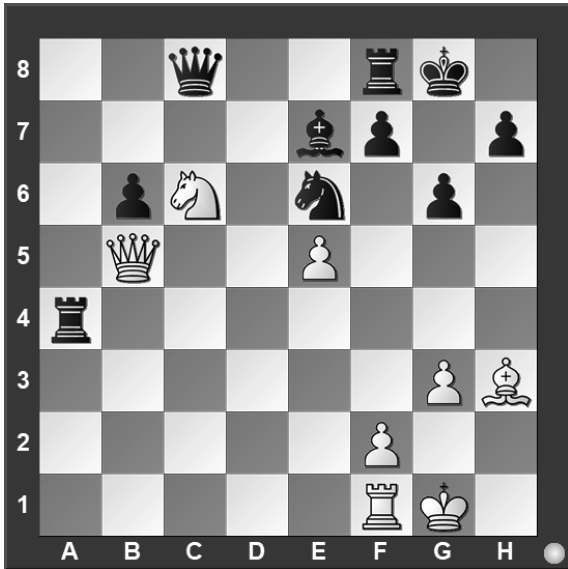
#8. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Bishop
- d) Knight

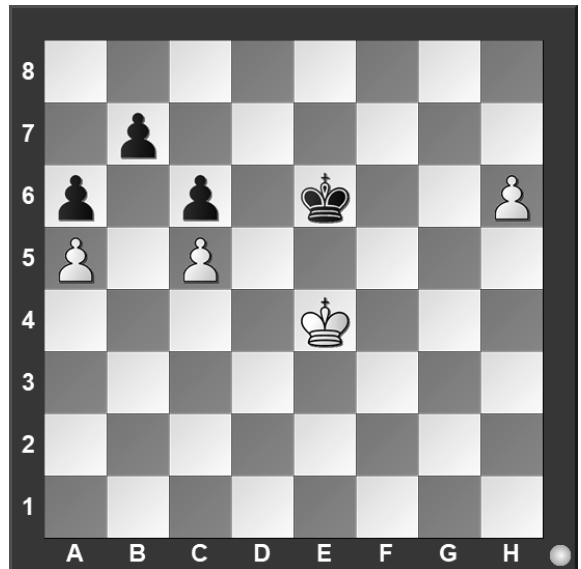
#9. White to move



What piece should White capture?

- a) Rook
- b) Bishop
- c) Knight
- d) pawn

#10. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

#11. White to move



What is White's best move?

- a) ♔xa5
- b) c5
- c) ♘c3
- d) ♘f6

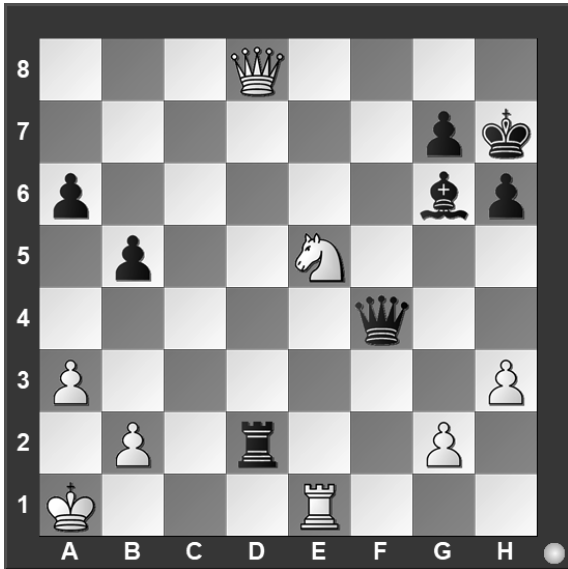
#12. White to move



What is White's best move?

- a) ♘a5
- b) ♘e5
- c) c6
- d) ♔e4

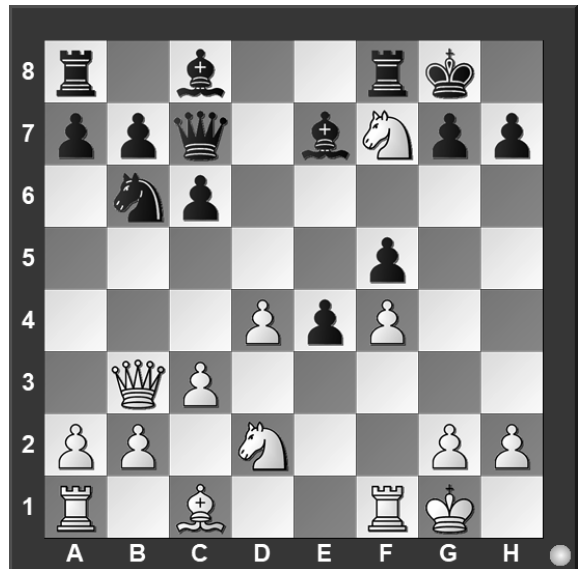
#13. White to move



What is White's best move?

- a) ♘d7
- b) ♔h8
- c) ♘xg6
- d) ♔b6

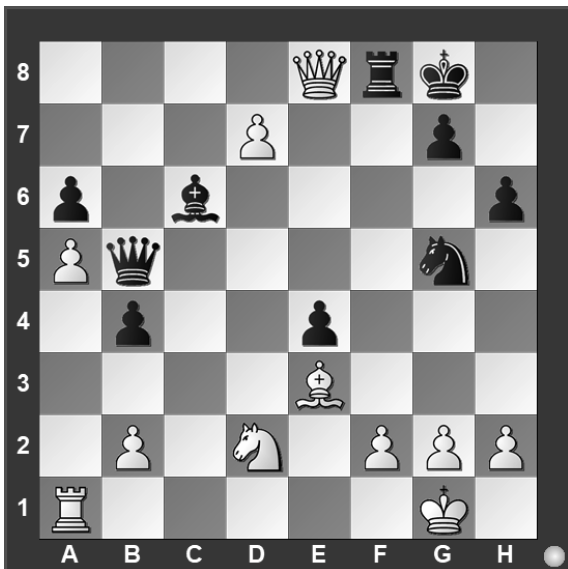
#14. White to move



If White can checkmate Black in three moves, what is the *first* move?

- a) ♘g5
- b) ♘e5
- c) ♘h6
- d) ♘d6

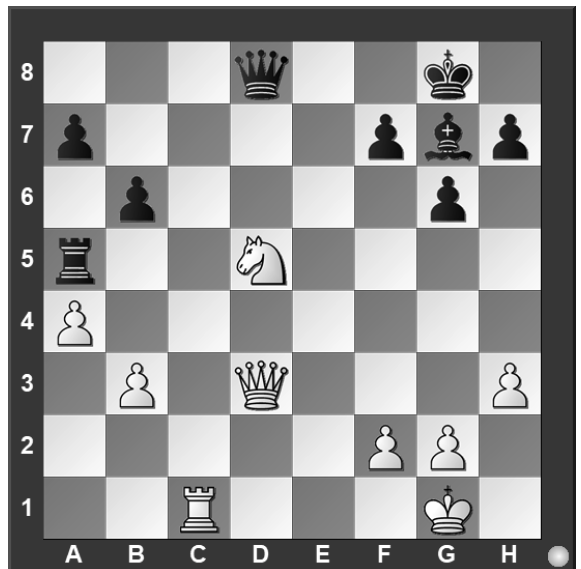
#15. White to move



What is White's best move?

- a) ♔g6
- b) ♔xf8
- c) ♔e7
- d) d8♔

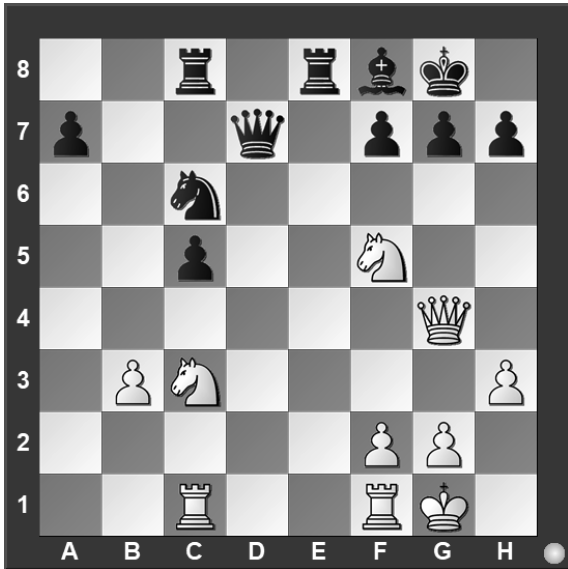
#16. White to move



What is White's best move?

- a) ♖d1
- b) ♘f4
- c) ♘e7
- d) ♖c8

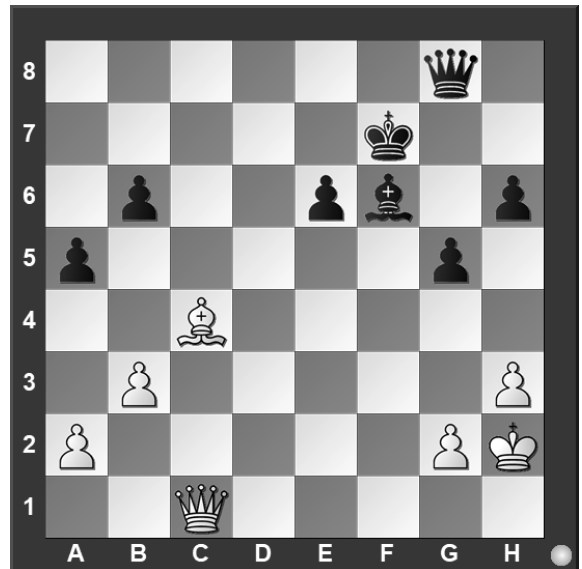
#17. White to move



What is White's best move?

- a)  $\text{N}e4$
- b)  $\text{R}fd1$
- c)  $\text{N}h6$
- d)  $\text{K}xg7$

#18. White to move



What is White's best move?

- a)  $\text{K}e3$
- b)  $\text{Q}xe6$
- c)  $\text{K}d2$
- d)  $\text{K}e1$

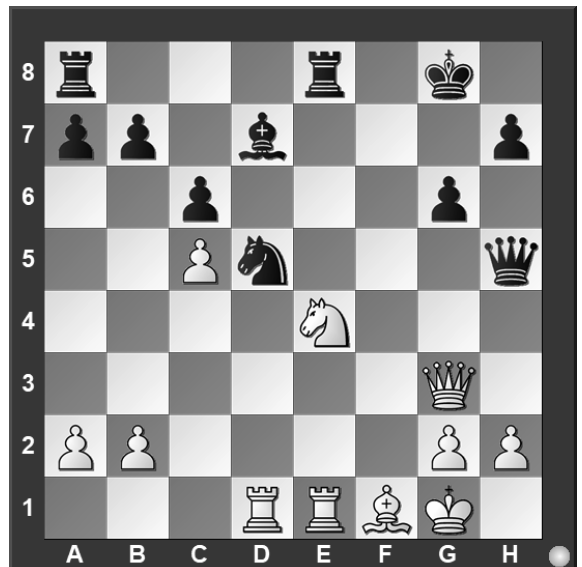
#19. White to move



What is White's best move?

- a) e6
- b)  $\text{R}g3$
- c)  $\text{N}c5$
- d) a5

#20. White to move



What is White's best move?

- a)  $\text{N}d6$
- b)  $\text{N}f6$
- c)  $\text{R}xd5$
- d)  $\text{Q}c4$



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| 7. B | 17. C |
| 8. A | 18. B |
| 9. B | 19. A |
| 10.A | 20. C |

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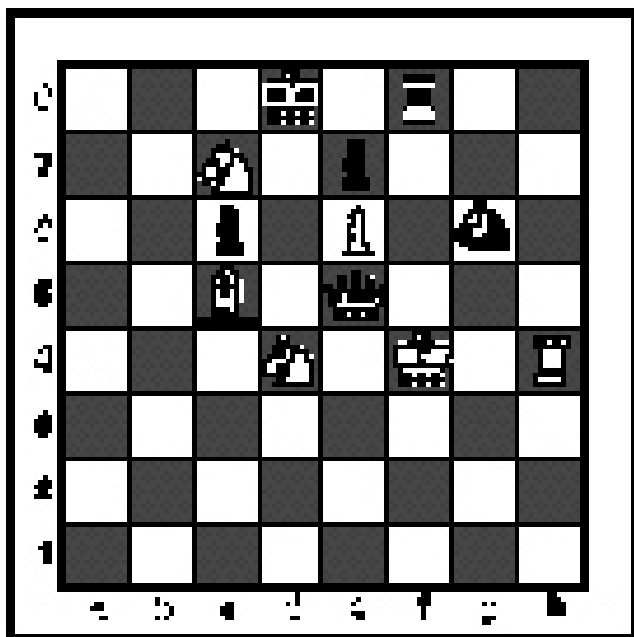
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# Chess Puzzle Solving

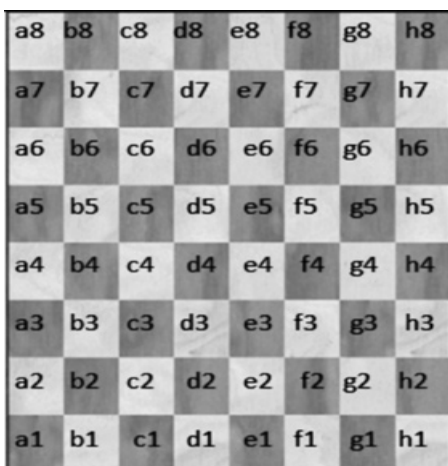
grades 6, 7, 8






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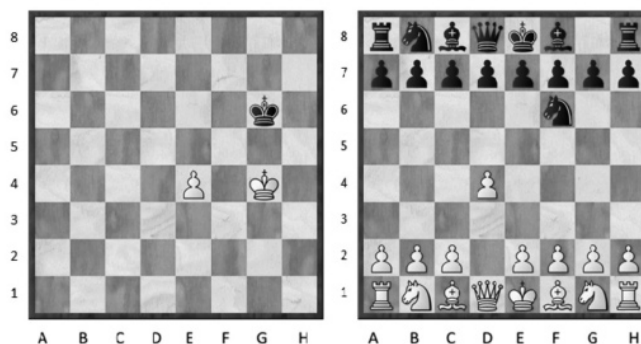


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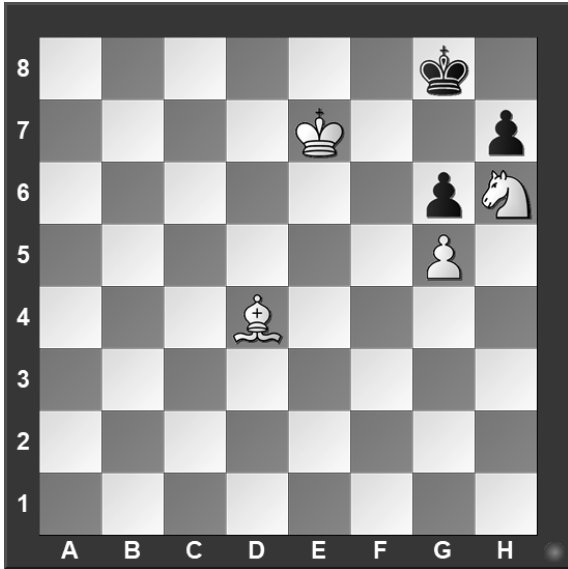
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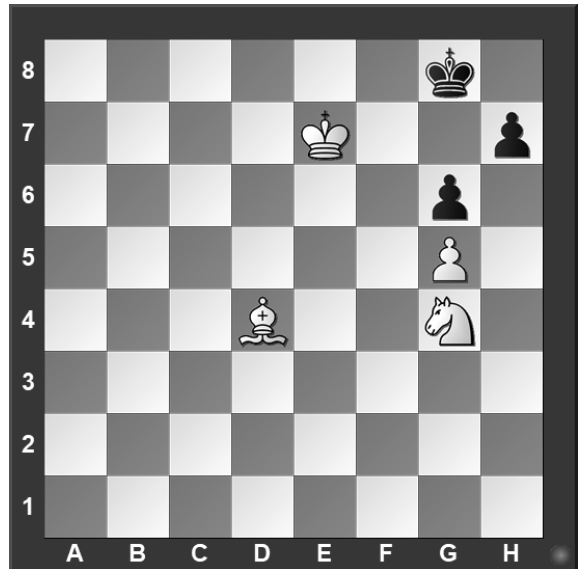
#1. Black to move



What term best describes this situation?

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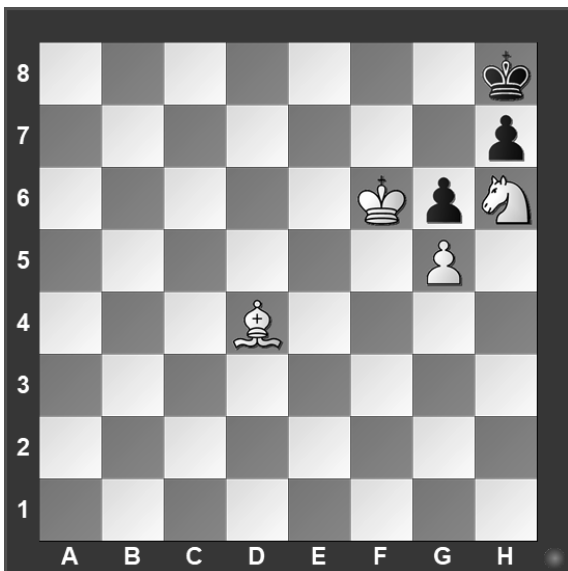
#2. Black to move



What term best describes this situation?

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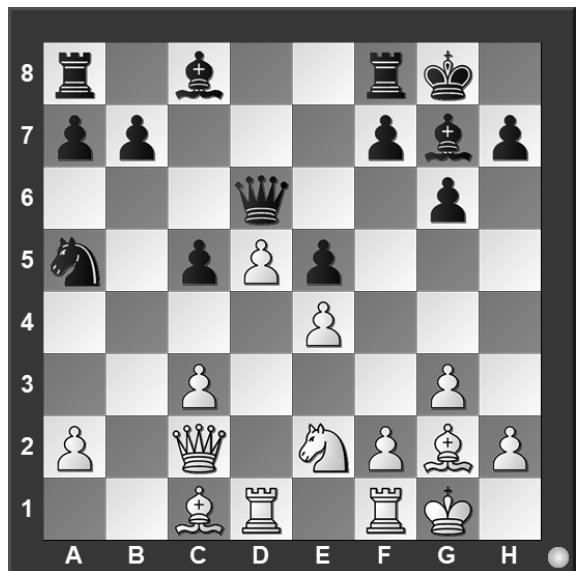
#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
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- c) Black is in check.
- d) None of the above.

#4. White to move



Black just played e7 to e5. Which pawn can be captured?

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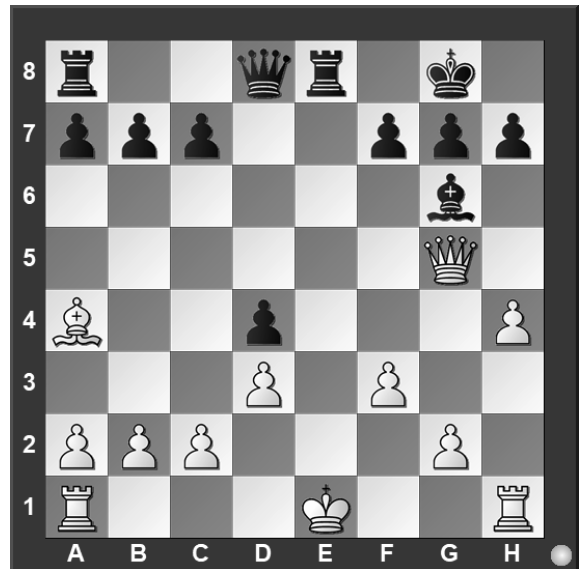
#5. White to move



Which side has material advantage?

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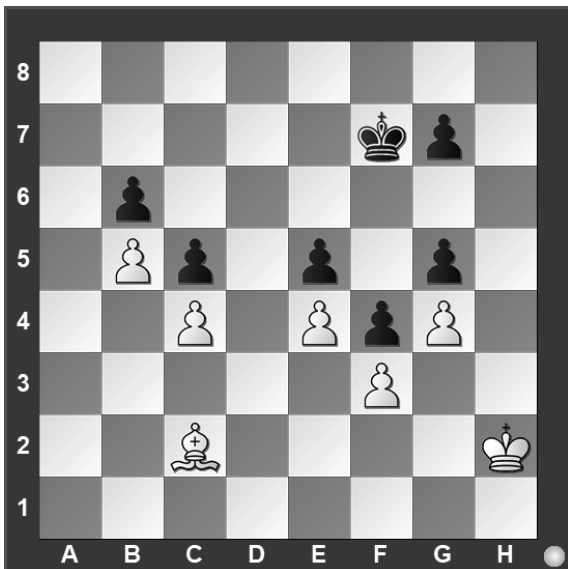
#6. White to move



Which move is possible for White?

- a) Short Castle.
- b) Long Castle.
- c) To capture the rook.
- d) To capture the queen.

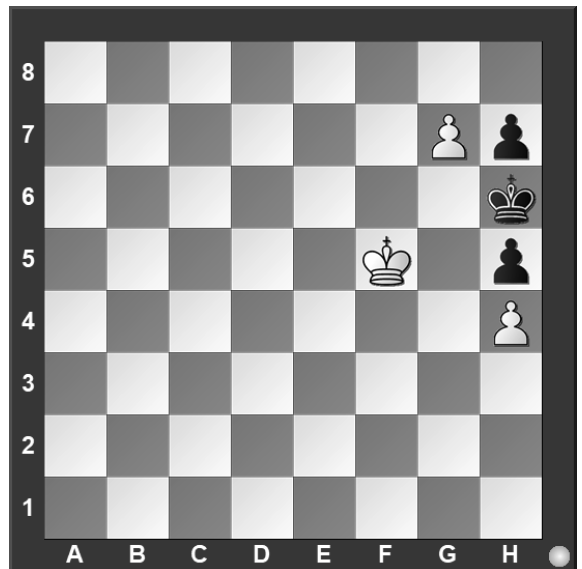
#7. White to move



What is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

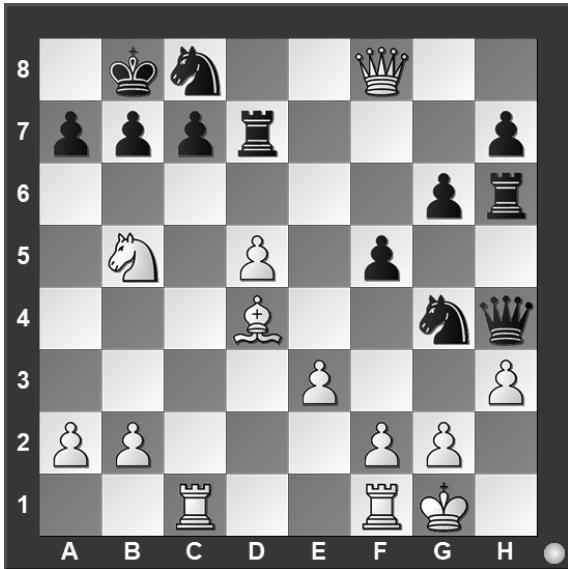
#8. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Bishop
- d) Knight

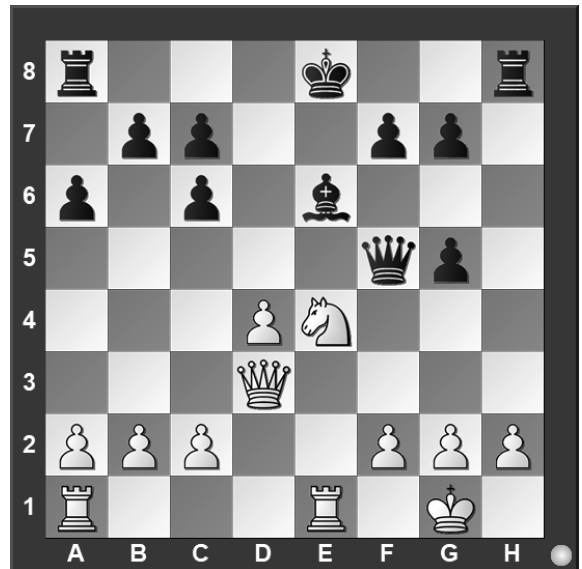
#9. White to move



If White can checkmate Black in two moves, what's the *first* move?

- a)  $\text{N} \times \text{a7}$
- b)  $\text{Q} \times \text{a7}$
- c)  $\text{R} \times \text{c7}$
- d)  $\text{N} \text{d6}$

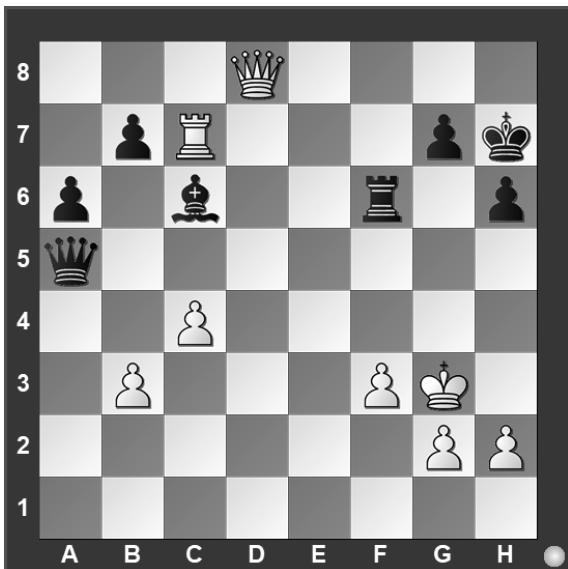
#10. White to move



What is White's best move?

- a)  $\text{N} \text{d6}$
- b)  $\text{N} \text{f6}$
- c)  $\text{B} \text{g3}$
- d)  $\text{c4}$

#11. White to move



What is White's best move?

- a)  $\text{Q} \text{e7}$
- b)  $\text{Q} \times \text{f6}$
- c)  $\text{R} \times \text{g7}$
- d)  $\text{R} \text{c8}$

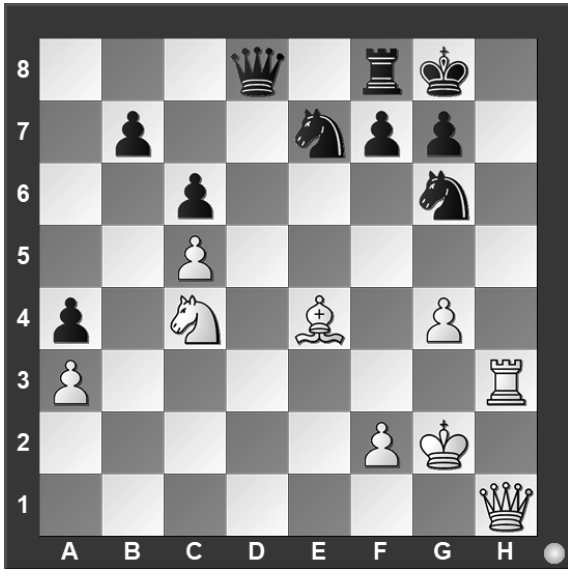
#12. White to move



What is White's best move?

- a)  $\text{Q} \text{c4}$
- b)  $\text{Q} \text{c4}$
- c)  $\text{R} \text{ad1}$
- d)  $\text{Q} \text{b5}$

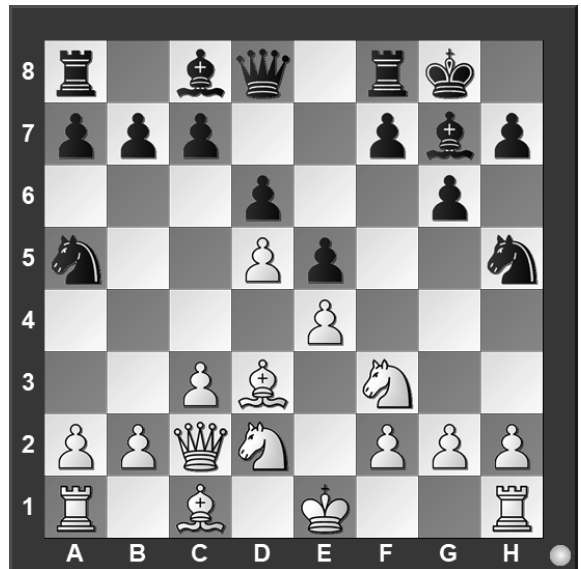
#13. White to move



If White can checkmate Black in two moves, what is the *first* move?

- a) ♖h8
- b) ♖d3
- c) ♕xg6
- d) ♗e5

#14. White to move



What is White's best move?

- a) 0-0
- b) g3
- c) ♘c4
- d) b4

#15. White to move



What is White's best move?

- a) ♖x a5
- b) ♖c2
- c) ♕x d8
- d) ♖c7

#16. White to move



What is White's best move?

- a) ♔g1
- b) ♕x d8
- c) ♖x g4
- d) ♔g3

#17. White to move



What is White's best move?

- a) ♖e7
- b) ♖xc8
- c) ♗xf5
- d) a4

#18. White to move



What is White's best move?

- a) ♔f1
- b) ♗xh6
- c) ♗h2
- d) ♖bf1

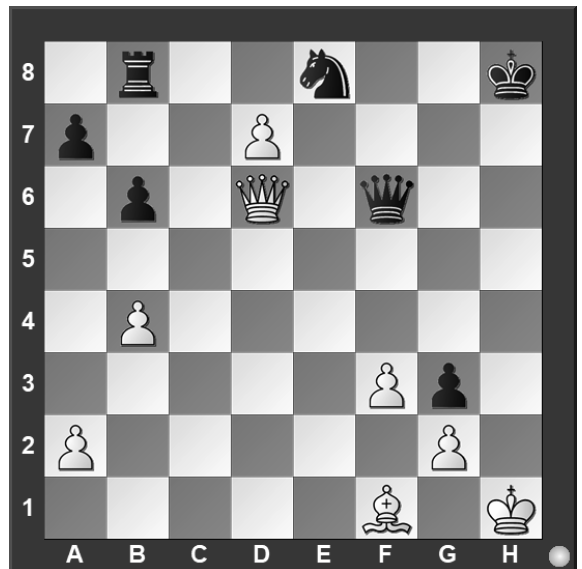
#19. White to move



How many moves does it take to checkmate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate

#20. White to move



What piece should White capture?

- a) Queen
- b) Rook
- c) Knight
- d) pawn



**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Fall/Winter — Grades 6, 7, and 8  
ANSWER KEY**

**Test**

- |       |       |
|-------|-------|
| 1. A  | 11. C |
| 2. D  | 12. B |
| 3. B  | 13. A |
| 4. B  | 14. D |
| 5. A  | 15. D |
| 6. C  | 16. C |
| 7. C  | 17. B |
| 8. D  | 18. B |
| 9. B  | 19. A |
| 10. A | 20. C |

**Tiebreaker**

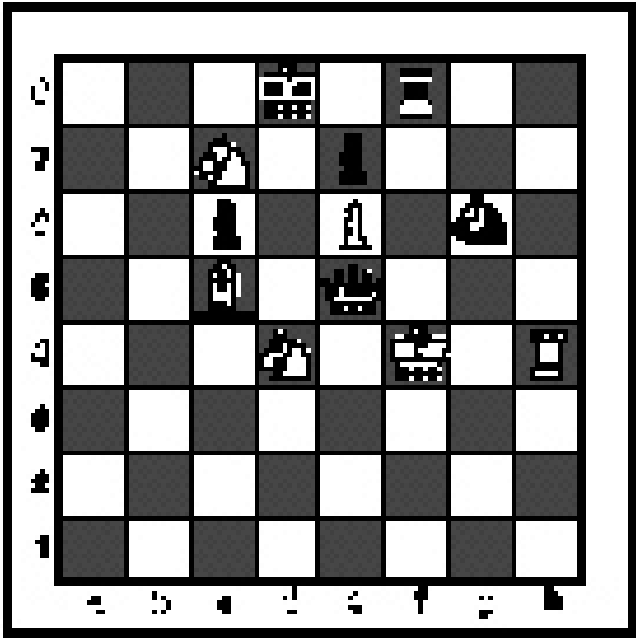
- |      |      |
|------|------|
| 1. B | 5. B |
| 2. C | 6. A |
| 3. A | 7. A |
| 4. A | 8. B |

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



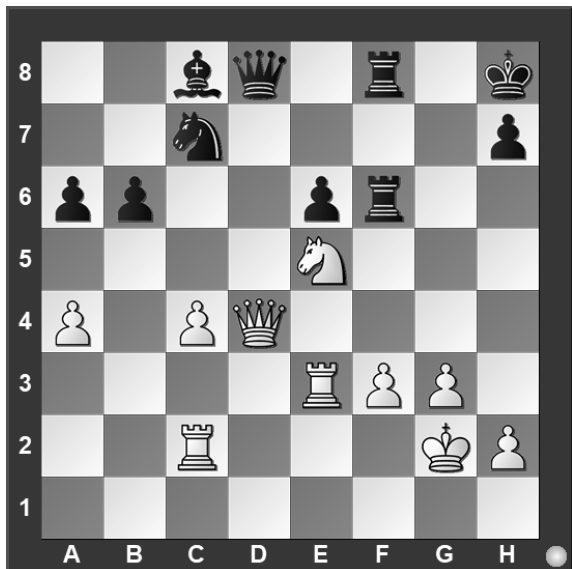
# Chess Puzzle Solving

## TIEBREAKER - ALL GRADES

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**



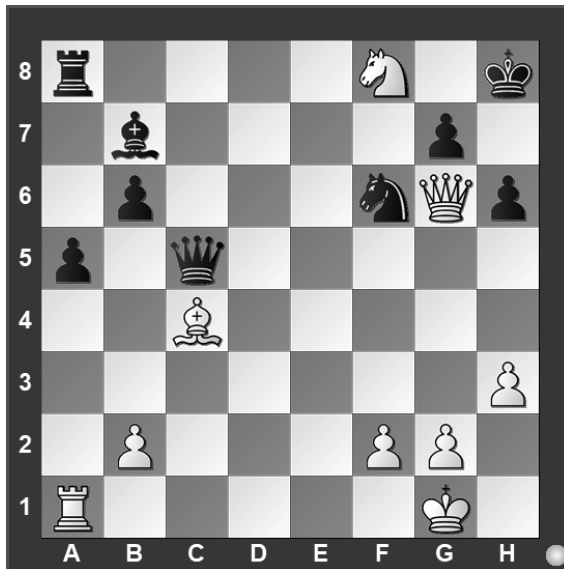
#1. White to move



What is White's best move?

- a) ♖b2
- b) ♘f7
- c) ♖×b6
- d) ♖×d8

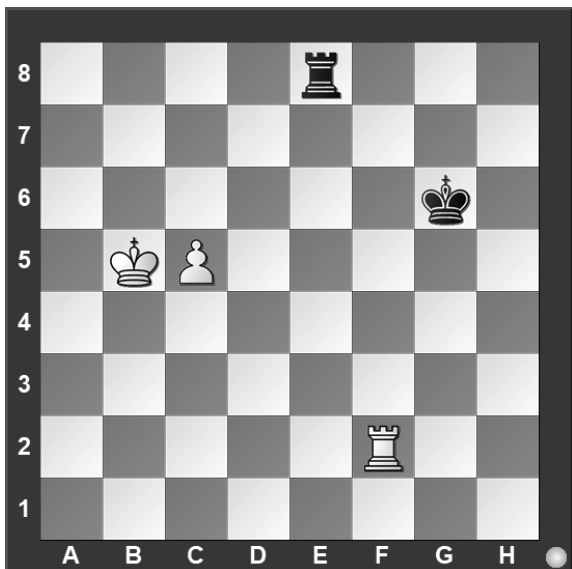
#2. White to move



If White can checkmate Black in two moves, what's the *first* move?

- a) ♘e6
- b) ♖×g7
- c) ♖h7
- d) ♘d3

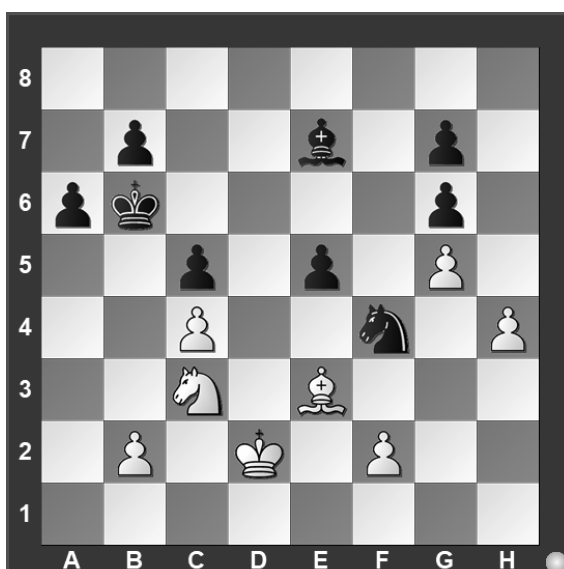
#3. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

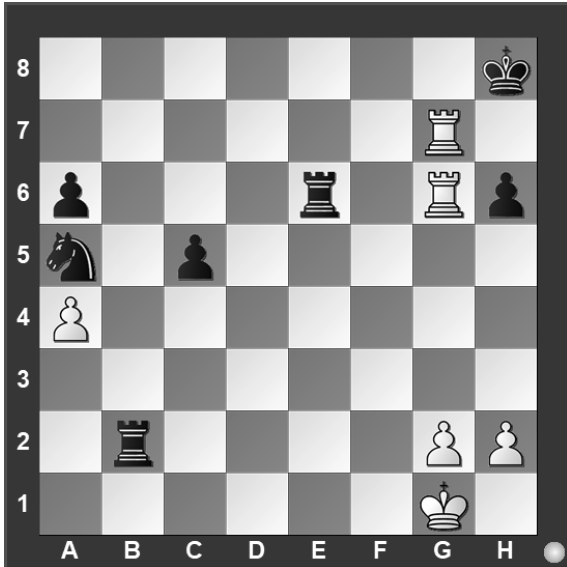
#4. White to move



What is White's best move?

- a) ♘×f4
- b) ♘d5
- c) ♘a4
- d) ♘e4

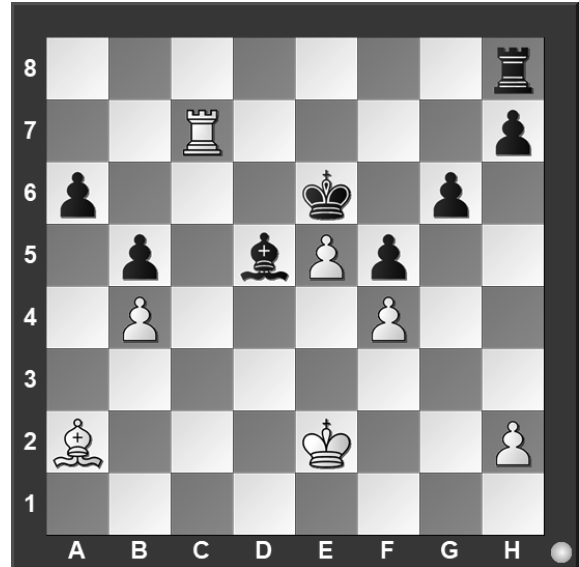
#5. White to move



How many moves does it take to checkmate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate

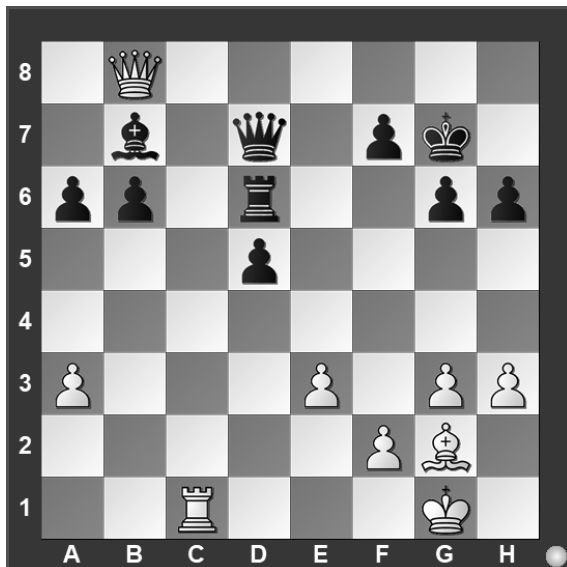
#6. White to move



What is White's best move?

- a) ♖c6
- b) ♙x d5
- c) ♖c5
- d) ♖a7

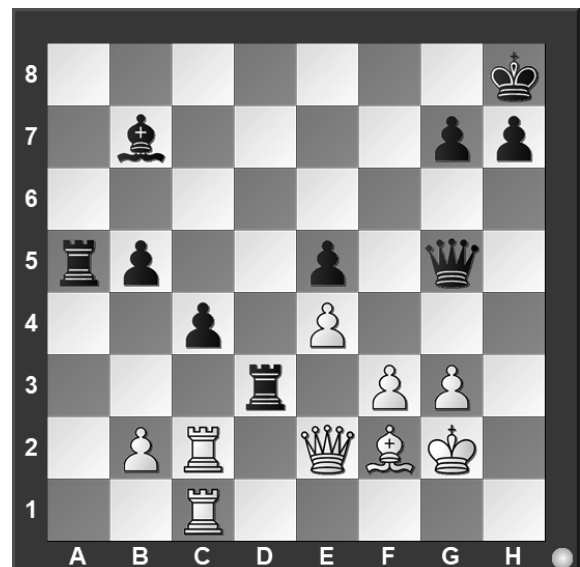
#7. White to move



What is White's best move?

- a) ♖c7
- b) h4
- c) ♙c7
- d) ♙f3

#8. White to move



What is White's best move?

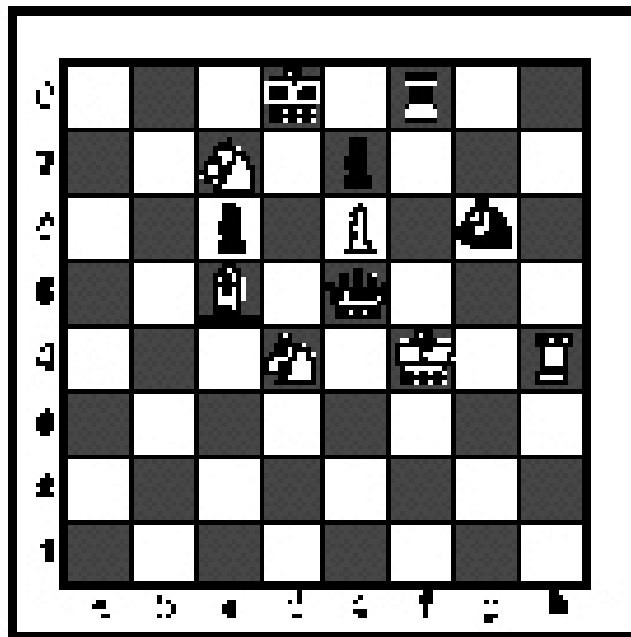
- a) ♖d1
- b) ♙x d3
- c) b4
- d) ♙b6

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Chess Puzzle Solving

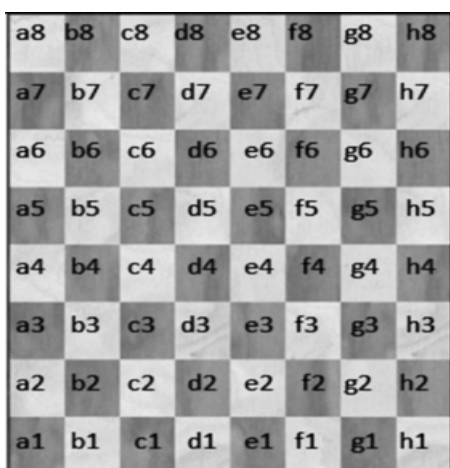
grades 2 & 3

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

## How to read and answer questions on this test

- To answer the questions on this test, you'll need to know how to read chess moves. It's simple to do.

- Every square on the board has an "address" made up of a letter and a number.



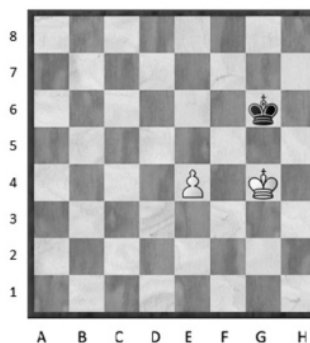
Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	
Queen	
Rook	
Bishop	
Knight	
Pawn	<b>a-h</b> (We write the file it's on.)

- To make them easy to read, the questions on this test use the figurine piece symbols on the right, above.

- When answering the puzzle questions, remember that white pawns move "up" the diagrams. Black pawns move "down" the diagrams.

At right are two sample moves.

If you look closely at the diagrams in the questions below, you'll see that the frame around the diagram labels the ranks (1-8) and files (a-h) to help you.

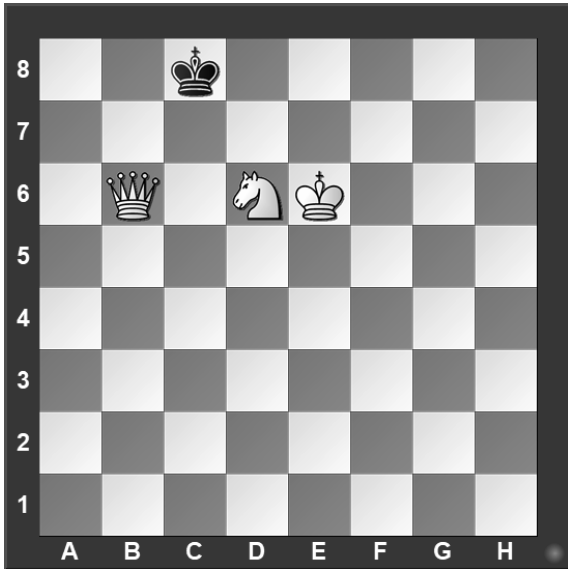


White has just played **e4**.



Black has just played ... **Nf6**.

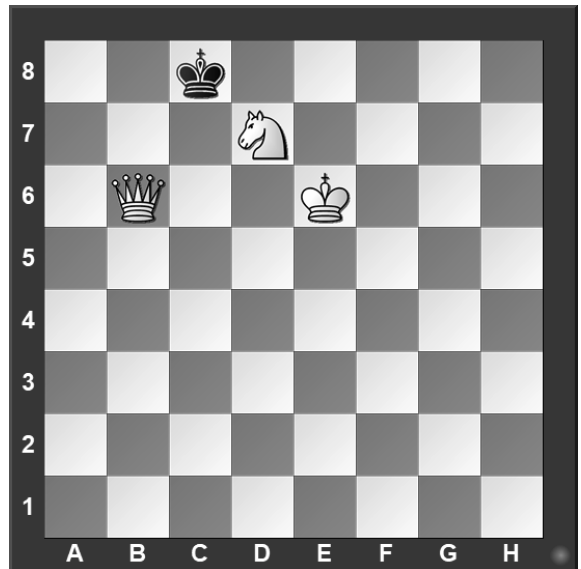
#1. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

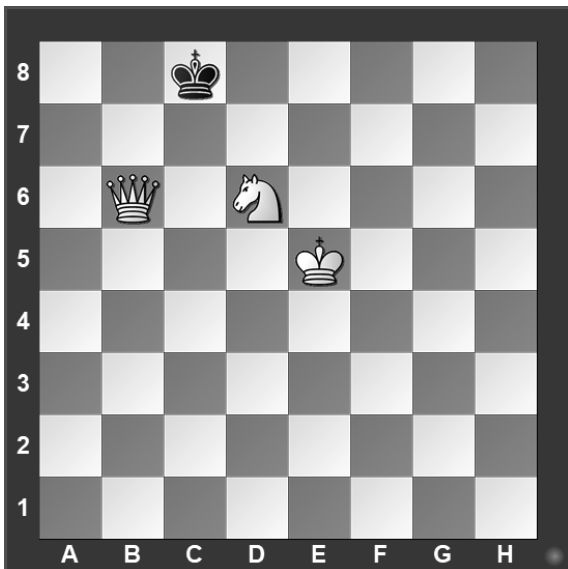
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

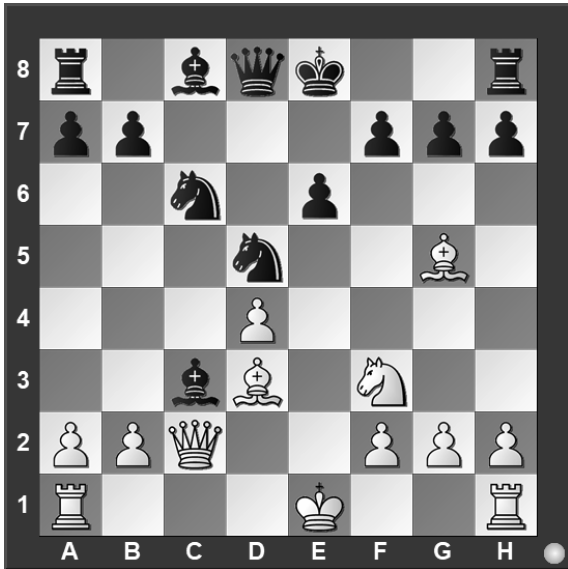
#4. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It's even.
- d) It's not possible to tell.

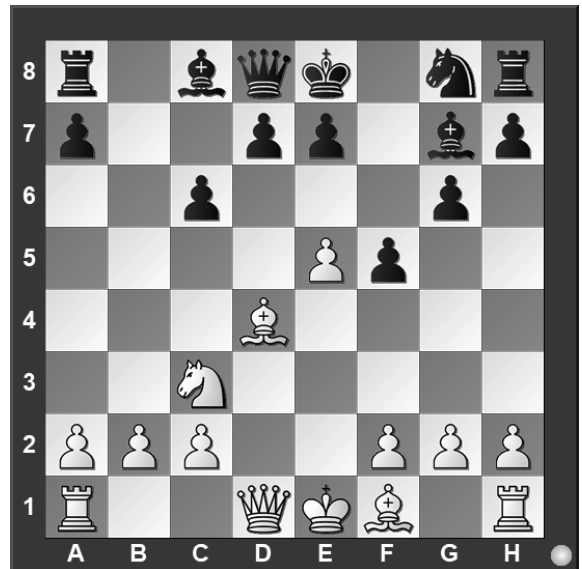
#5. White to move



Which move is possible for White?

- a) Short Castle.
- b) Long Castle.
- c) To capture the bishop.
- d) To capture the queen.

#6. White to move



Black just played f7 to f5. Which pawn can be captured?

- a) Black's g-pawn.
- b) Black's f-pawn.
- c) Black's e-pawn.
- d) White can't capture a pawn.

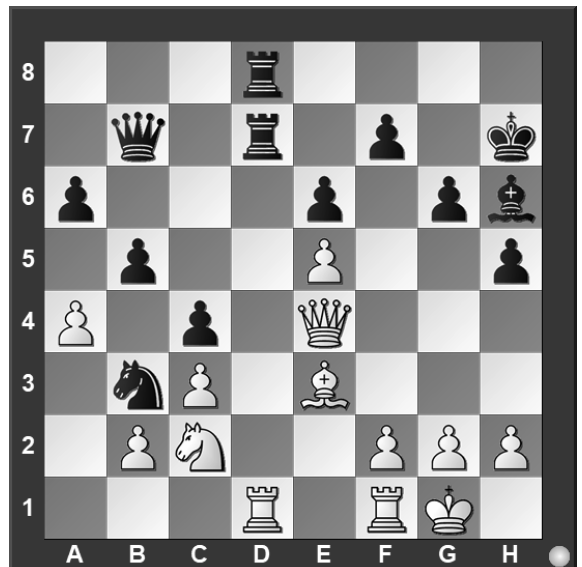
#7. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

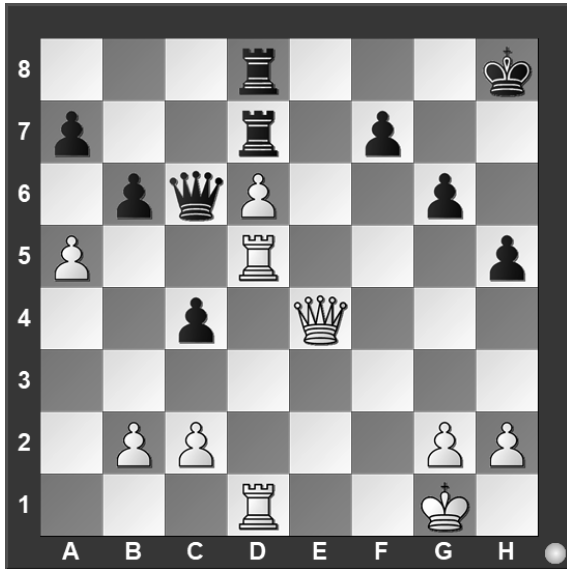
#8. White to move



What piece should White capture?

- a) Queen
- b) Rook
- c) Bishop
- d) pawn

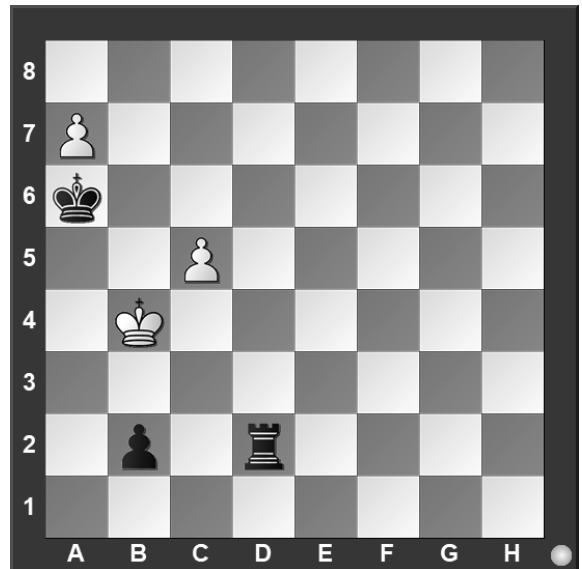
#9. White to move



What is White's best move?

- a) ♖1d4
- b) ♖xh5
- c) ♔d4
- d) axb6

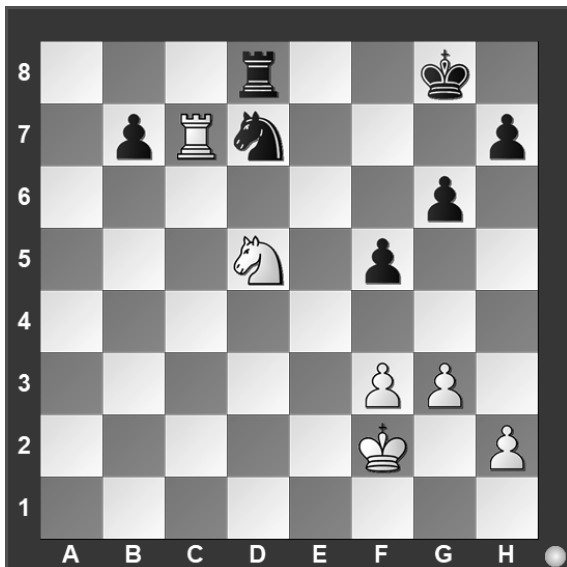
#10. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Knight
- d) Bishop

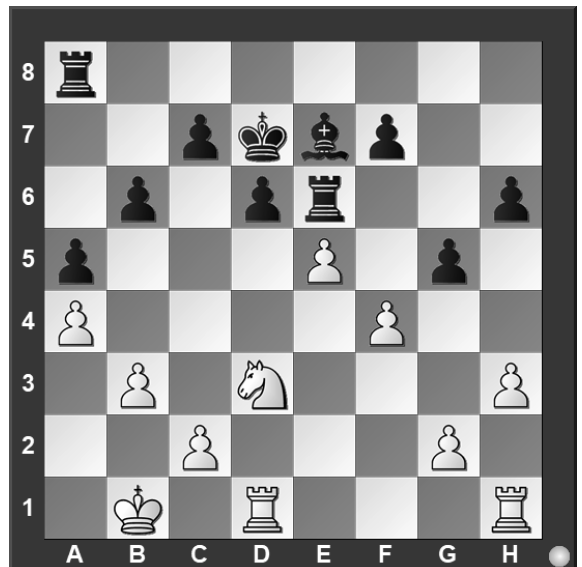
#11. White to move



What is White's best move?

- a) ♖xb7
- b) ♖xd7
- c) ♞f4
- d) g4

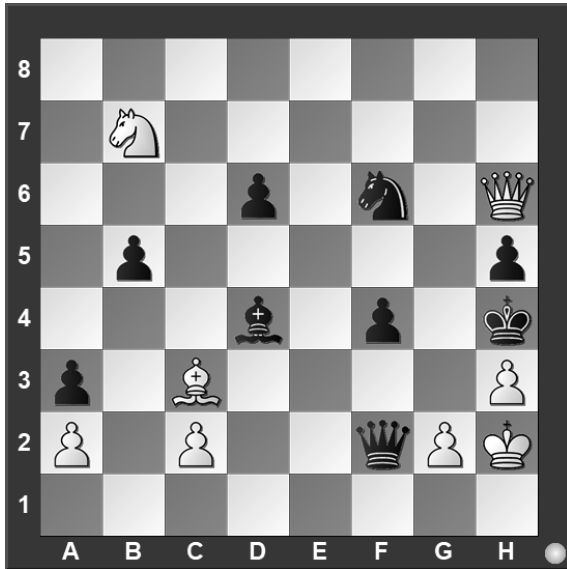
#12. White to move



What is White's best move?

- a) ♖hf1
- b) f5
- c) exd6
- d) f×g5

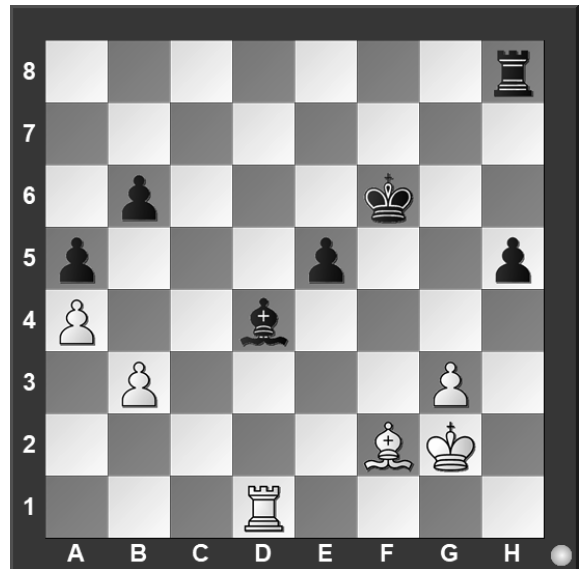
#13. White to move



If White can checkmate Black in two moves, what is the *first* move?

- a) ♔×f6
- b) ♕×d4
- c) ♖×d6
- d) ♗e1

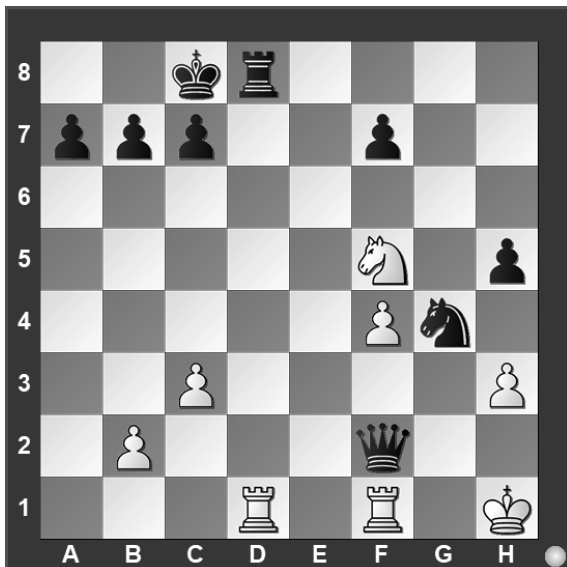
#14. White to move



What is White's best move?

- a) ♖×d4
- b) ♕×d4
- c) ♖f1
- d) ♖c1

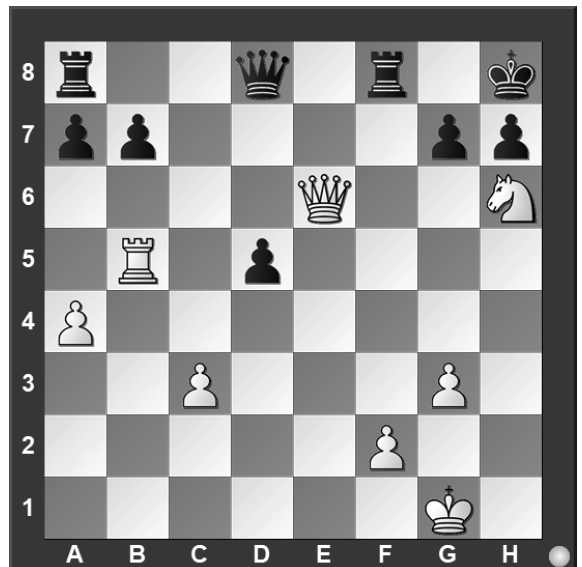
#15. White to move



What is White's best move?

- a) ♖×d8
- b) ♖×f2
- c) ♗e7
- d) h×g4

#16. White to move



What is White's best move?

- a) ♔g8
- b) ♗f7
- c) ♖×d5
- d) ♖×b7





**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Spring — Grades 2 & 3**

**ANSWER KEY**

**Test**

- |      |       |
|------|-------|
| 1. A | 11. B |
| 2. B | 12. B |
| 3. C | 13. A |
| 4. B | 14. A |
| 5. C | 15. C |
| 6. B | 16. A |
| 7. A |       |
| 8. A |       |
| 9. B |       |
| 10.A |       |

**Tiebreaker**

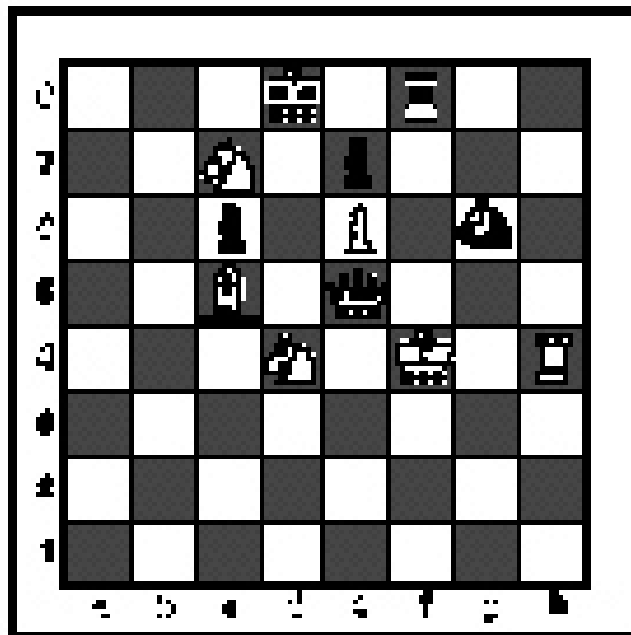
- |      |      |
|------|------|
| 1. D | 5. C |
| 2. C | 6. D |
| 3. C | 7. B |
| 4. B | 8. A |

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Chess Puzzle Solving

grades 4 & 5

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

## How to read and answer questions on this test

- To answer the questions on this test, you'll need to know how to read chess moves. It's simple to do.
- Every square on the board has an "address" made up of a letter and a number.

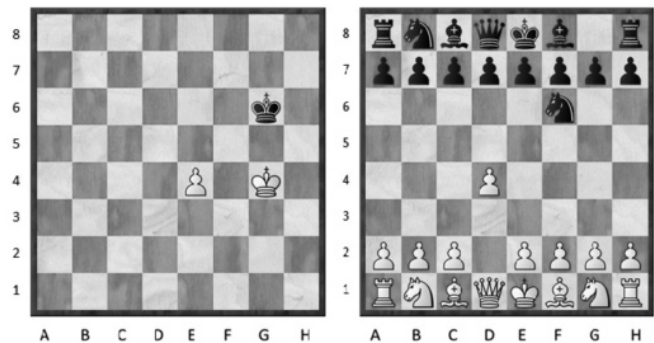


Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	
Queen	
Rook	
Bishop	
Knight	
Pawn	<b>a-h</b> (We write the file it's on.)

- To make them easy to read, the questions on this test use the figurine piece symbols on the right, above.
- When answering the puzzle questions, remember that white pawns move "up" the diagrams. Black pawns move "down" the diagrams.

At right are two sample moves.

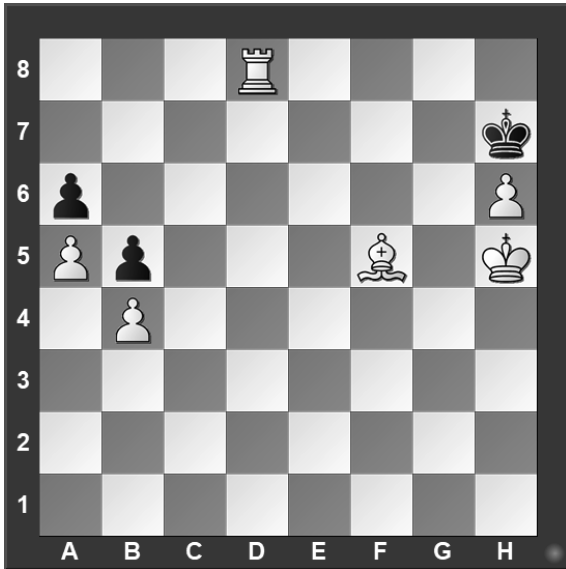
If you look closely at the diagrams in the questions below, you'll see that the frame around the diagram labels the ranks (1-8) and files (a-h) to help you.



White has just played **e4**.

Black has just played ... **Nf6**.

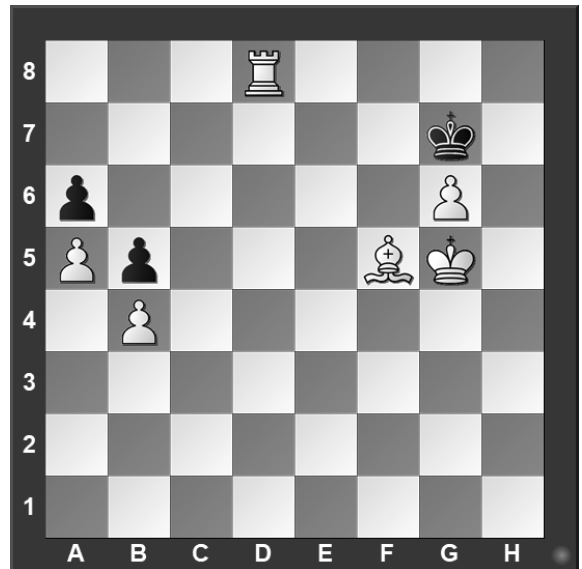
#1. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

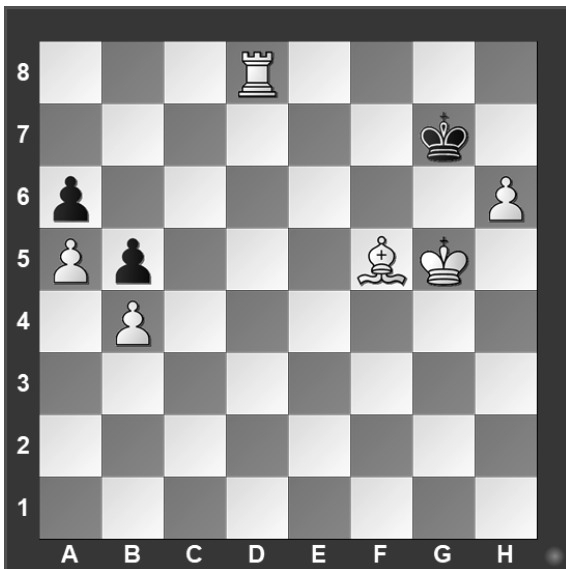
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

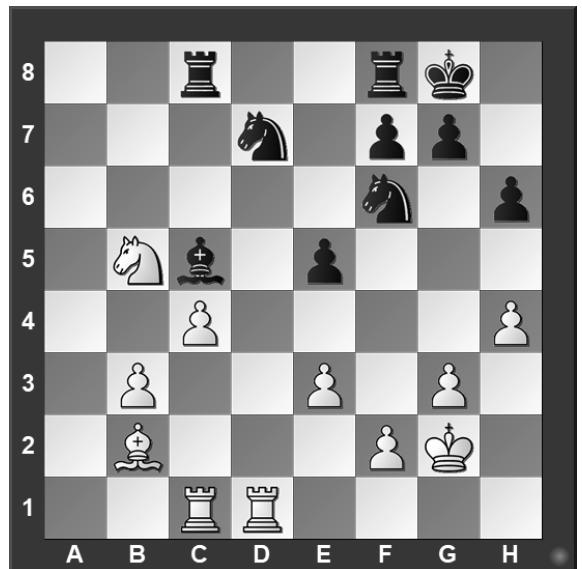
#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

#4. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It's even.
- d) It's not possible to tell.

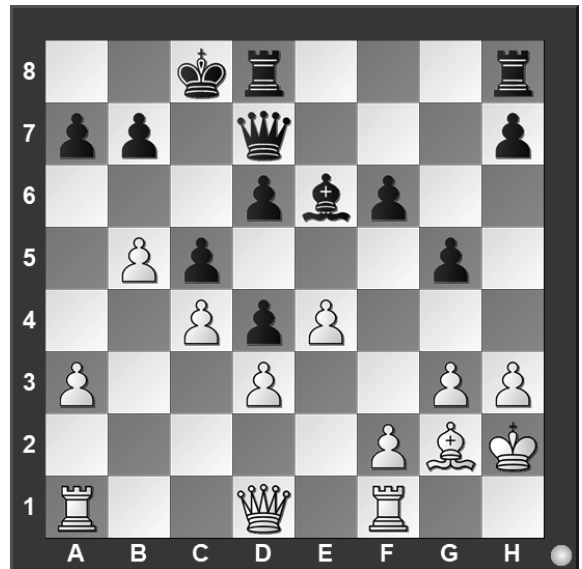
#5. White to move



Which move is possible for White?

- a) Short Castle .
- b) Long Castle.
- c) To capture the bishop.
- d) To capture the knight.

#6. White to move



Black just played c7 to c5. Which pawn can be captured?

- a) Black's b-pawn.
- b) Black's c-pawn.
- c) Black's d-pawn.
- d) White can't capture a pawn.

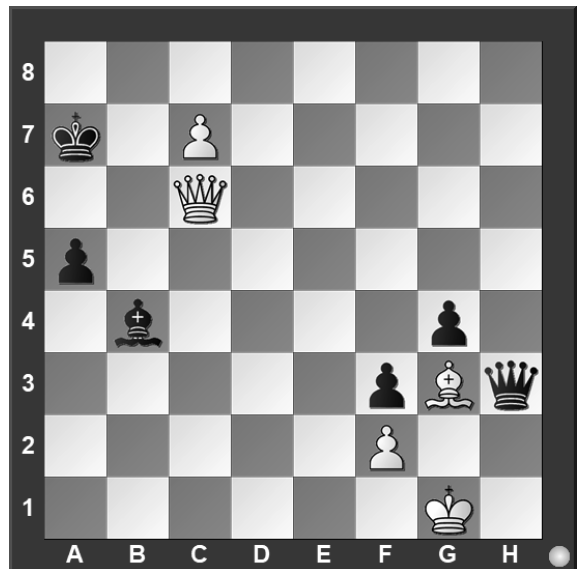
#7. White to move



How many moves does it take to check-mate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate

#8. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Bishop
- d) Knight

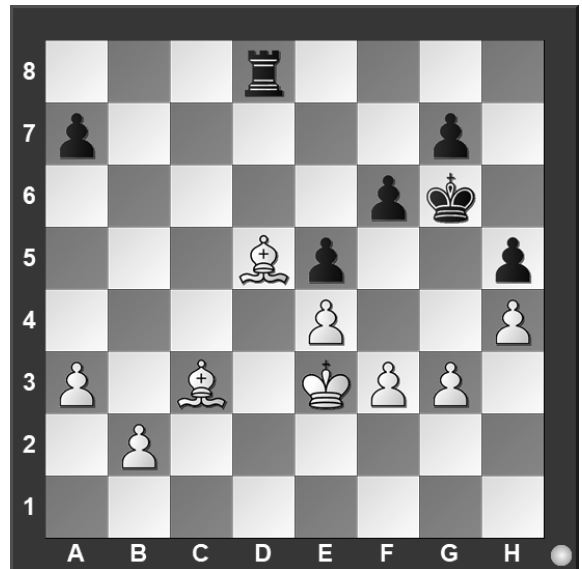
#9. White to move



What piece should White capture?

- a) Rook
- b) Bishop
- c) Knight
- d) pawn

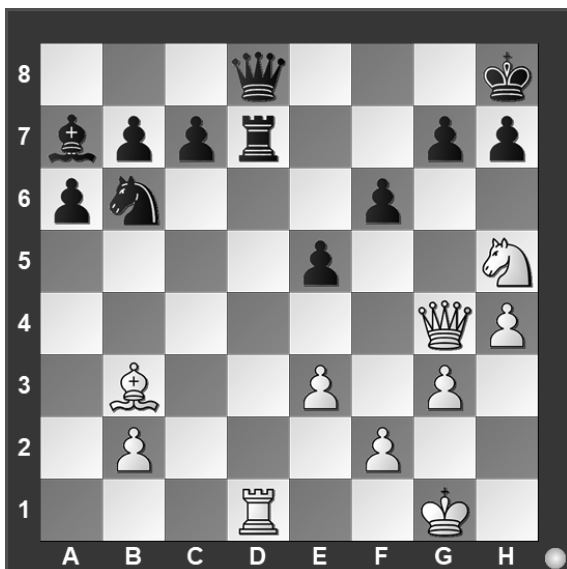
#10. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

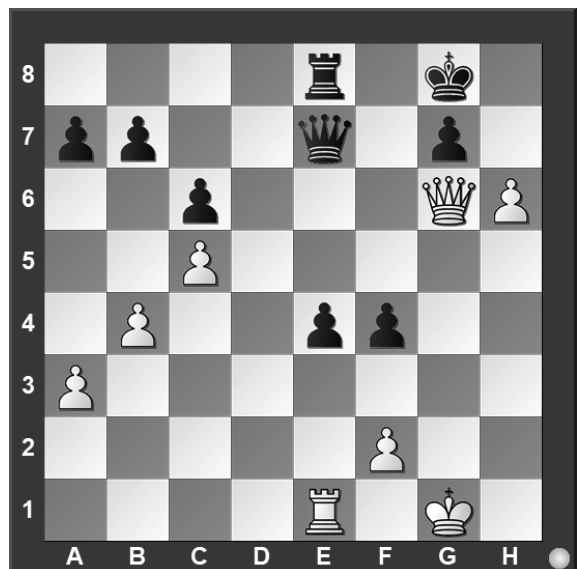
#11. White to move



What is White's best move?

- a) ♖xd7
- b) ♔xg7
- c) ♞xg7
- d) ♕e6

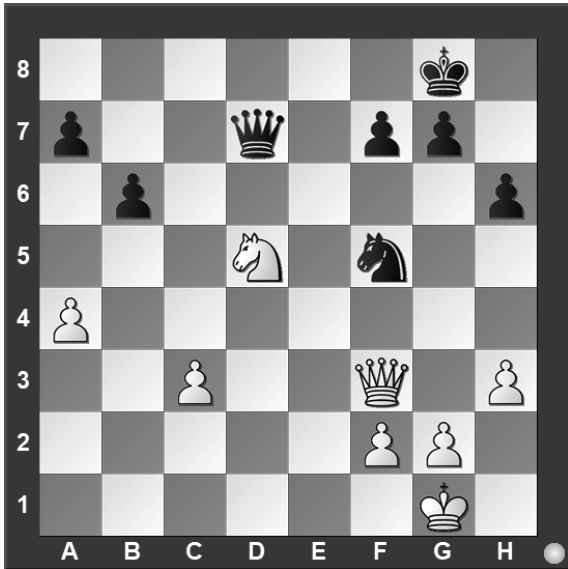
#12. White to move



What is White's best move?

- a) ♖xe4
- b) h×g7
- c) h7
- d) ♖f1

#13. White to move



What is White's best move?

- a) ♔d3
- b) ♔xf5
- c) a5
- d) g4

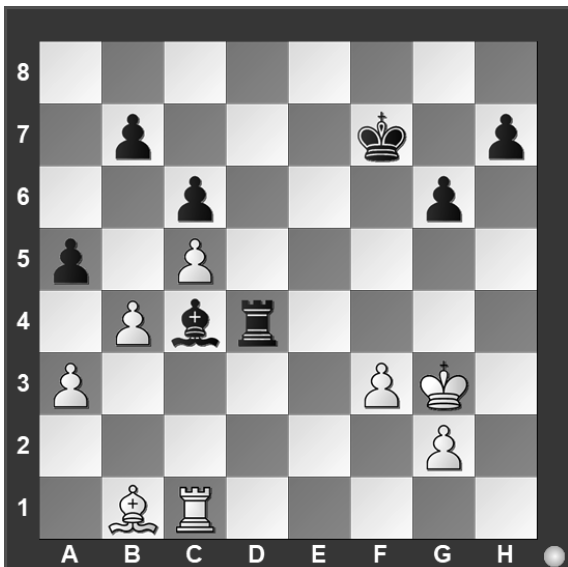
#14. White to move



If White can checkmate Black in two moves, what is the *first* move?

- a) ♔f5
- b) ♔h5
- c) ♔xc6
- d) ♖xh7

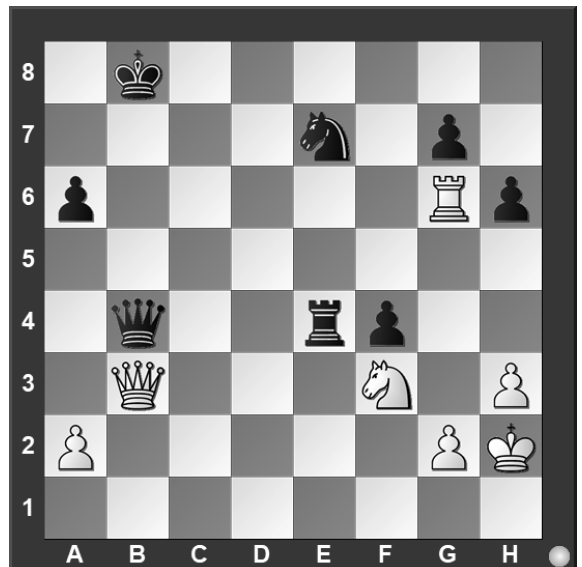
#15. White to move



What is White's best move?

- a) ♖f2
- b) ♖xc4
- c) ♖h1
- d) bxa5

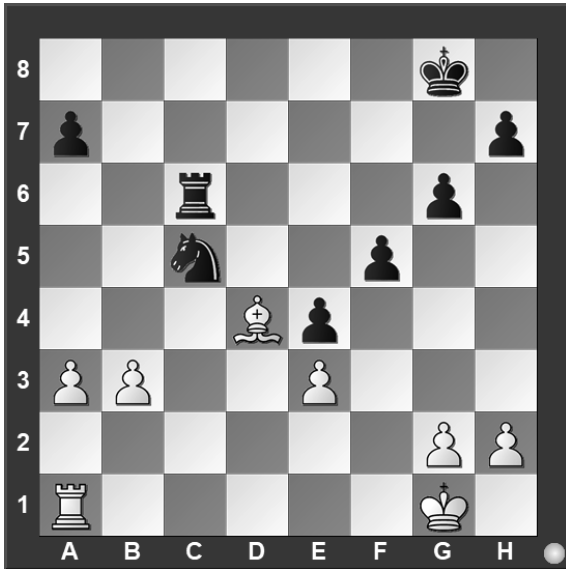
#16. White to move



What is White's best move?

- a) ♔xb4
- b) ♖b6
- c) ♖xg7
- d) ♖xa6

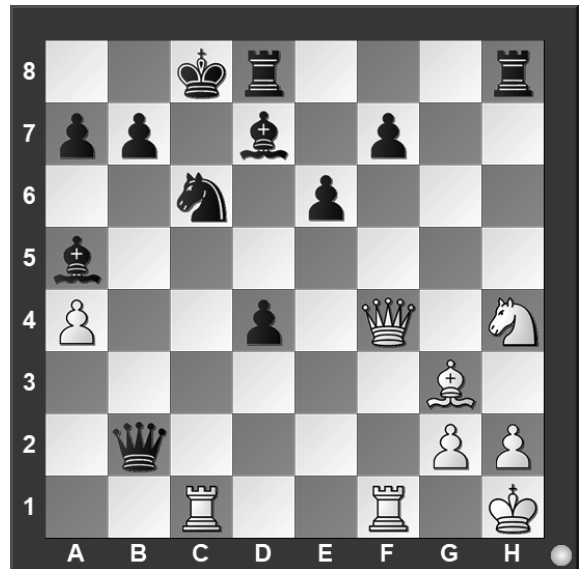
#17. White to move



What is White's best move?

- a) ♖b1
- b) ♖c1
- c) ♗xc5
- d) b4

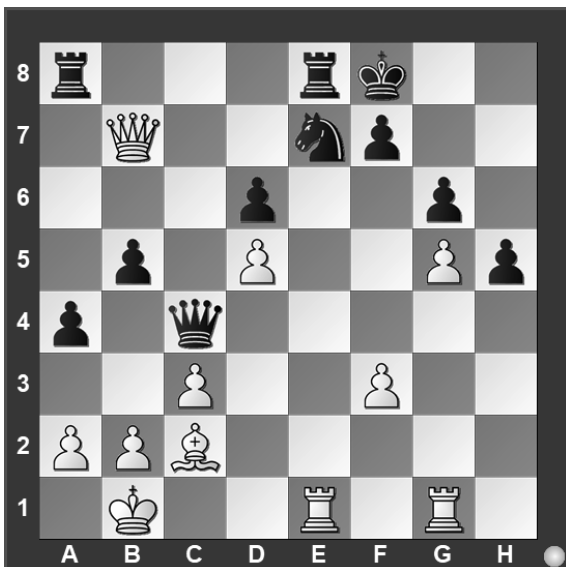
#18. White to move



What is White's best move?

- a) ♔c7
- b) ♔b8
- c) ♔xf7
- d) ♖xc6

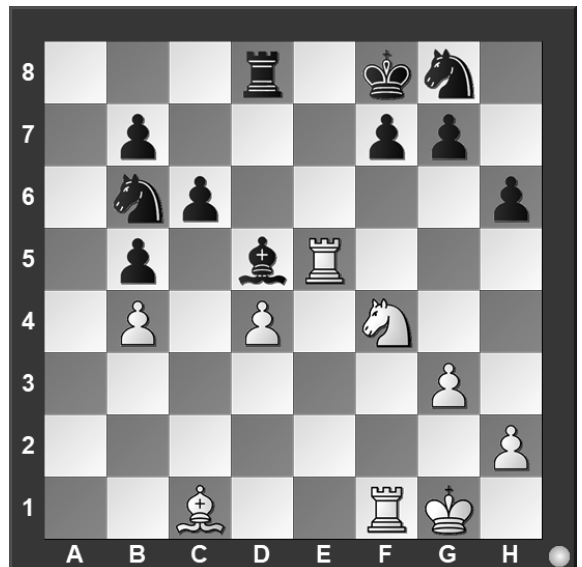
#19. White to move



What is White's best move?

- a) ♔b6
- b) ♖e4
- c) ♖xe7
- d) f4

#20. White to move



What is White's best move?

- a) ♖xd5
- b) ♗xd5
- c) ♗g6
- d) h4





**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Spring — Grades 4 & 5**

**ANSWER KEY**

**Test**

- |      |       |
|------|-------|
| 1. A | 11. B |
| 2. B | 12. A |
| 3. C | 13. B |
| 4. B | 14. D |
| 5. C | 15. B |
| 6. B | 16. B |
| 7. C | 17. B |
| 8. D | 18. B |
| 9. C | 19. C |
| 10.A | 20. C |

**Tiebreaker**

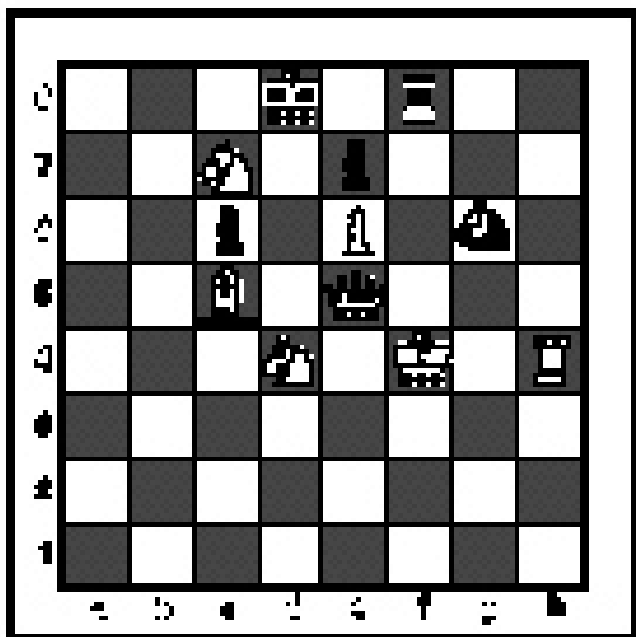
- |      |      |
|------|------|
| 1. D | 5. C |
| 2. C | 6. D |
| 3. C | 7. B |
| 4. B | 8. A |

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Chess Puzzle Solving

grades 6, 7, 8

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

## How to read and answer questions on this test

- To answer the questions on this test, you'll need to know how to read chess moves. It's simple to do.
- Every square on the board has an "address" made up of a letter and a number.

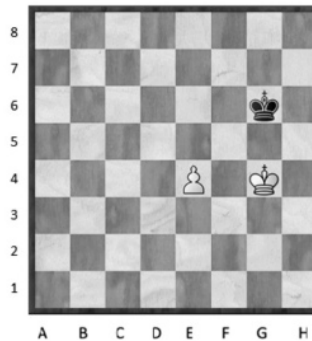


At right are two sample moves.

If you look closely at the diagrams in the questions below, you'll see that the frame around the diagram labels the ranks (1-8) and files (a-h) to help you.

Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	
Queen	
Rook	
Bishop	
Knight	
Pawn	<b>a-h</b> (We write the file it's on.)

- To make them easy to read, the questions on this test use the figurine piece symbols on the right, above.
- When answering the puzzle questions, remember that white pawns move "up" the diagrams. Black pawns move "down" the diagrams.

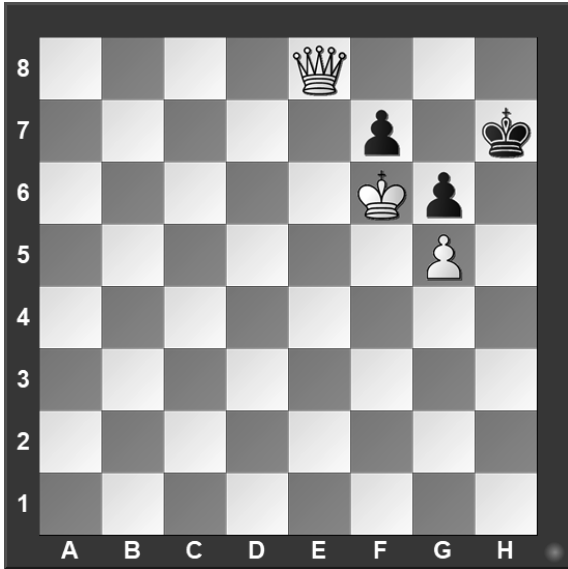


White has just played **e4**.



Black has just played ... **Nf6**.

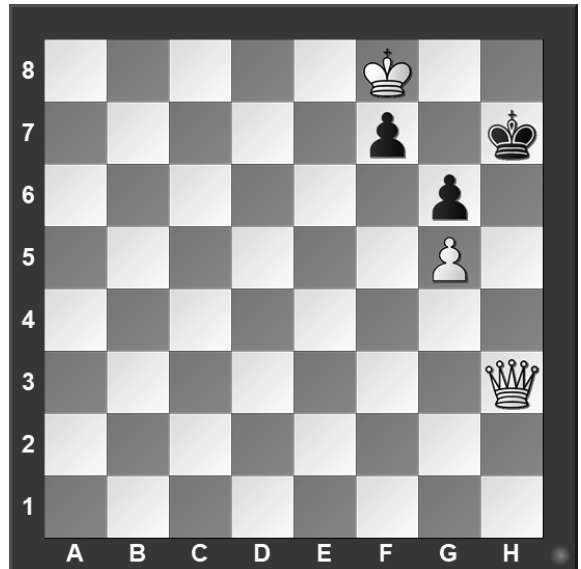
#1. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

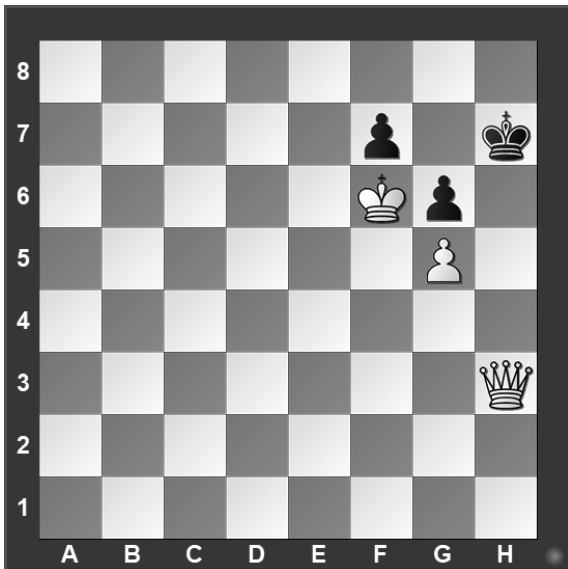
#2. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

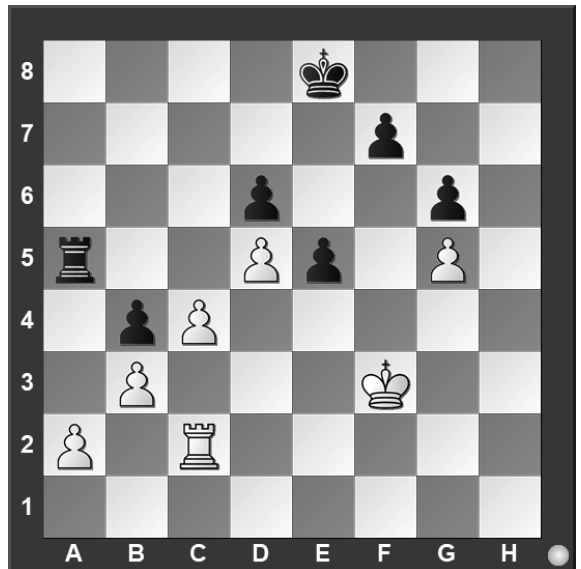
#3. Black to move



What term best describes this situation?

- a) Black is in checkmate.
- b) Black is in stalemate.
- c) Black is in check.
- d) None of the above.

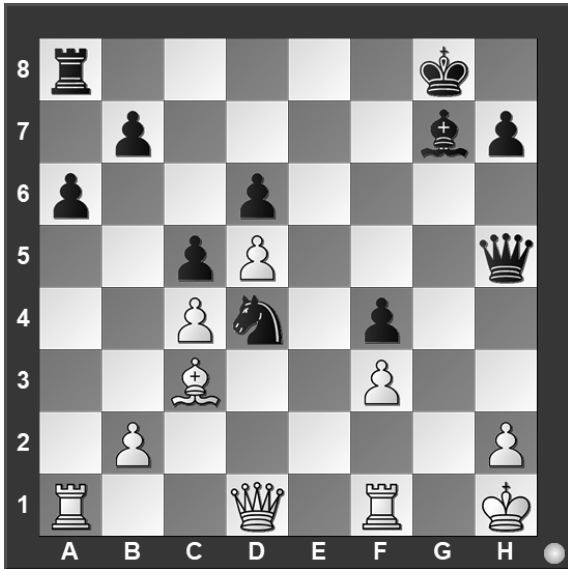
#4. White to move



Black just played e7 to e5. Which pawn can be captured?

- a) Black's f-pawn.
- b) Black's e-pawn.
- c) Black's d-pawn.
- d) White can't capture a pawn.

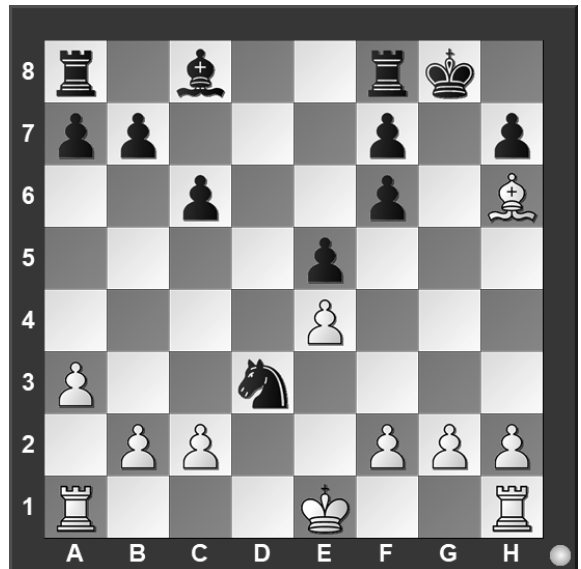
#5. White to move



Which side has material advantage?

- a) White.
- b) Black.
- c) It is even.
- d) It is not possible to tell.

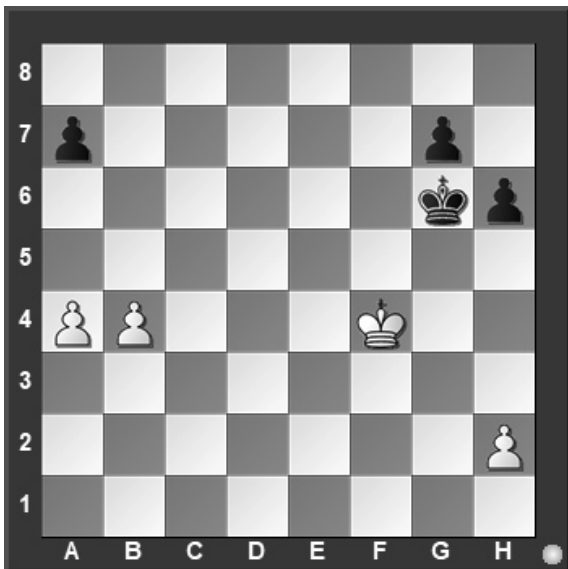
#6. White to move



Which move is possible for White?

- a) Short Castle.
- b) Long Castle.
- c) To capture the knight.
- d) To capture the rook.

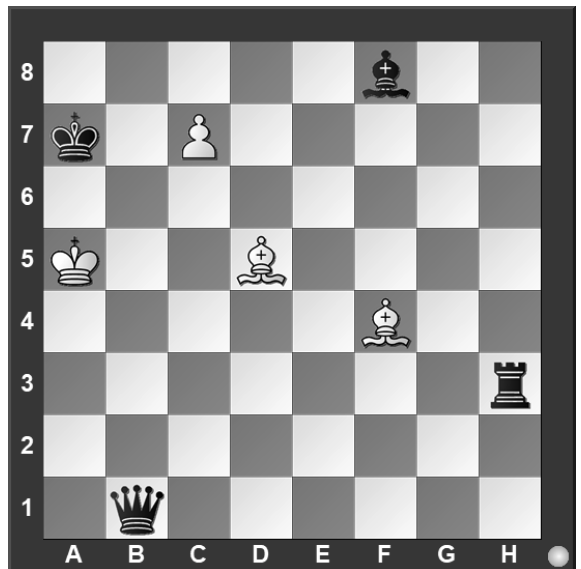
#7. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

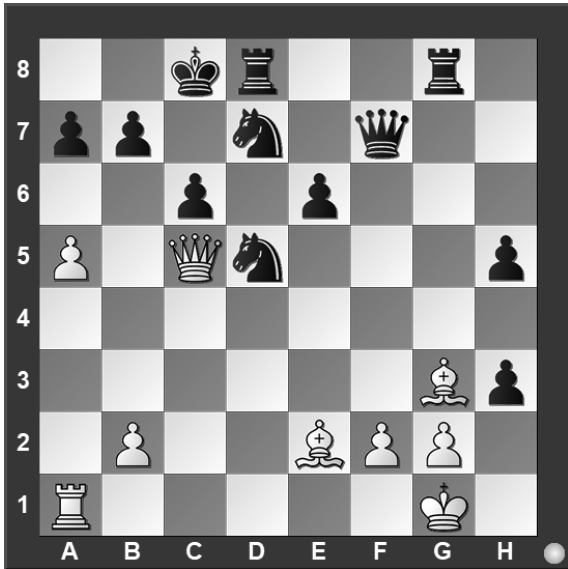
#8. White to move



What piece should White promote to?

- a) Queen
- b) Rook
- c) Bishop
- d) Knight

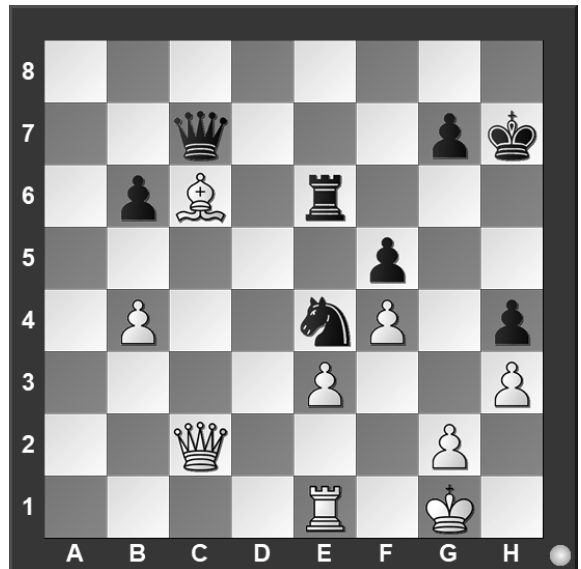
#9. White to move



If White can checkmate Black in two moves, what's the *first* move?

- a) ♔×a7
- b) ♔×c6
- c) ♔d6
- d) a6

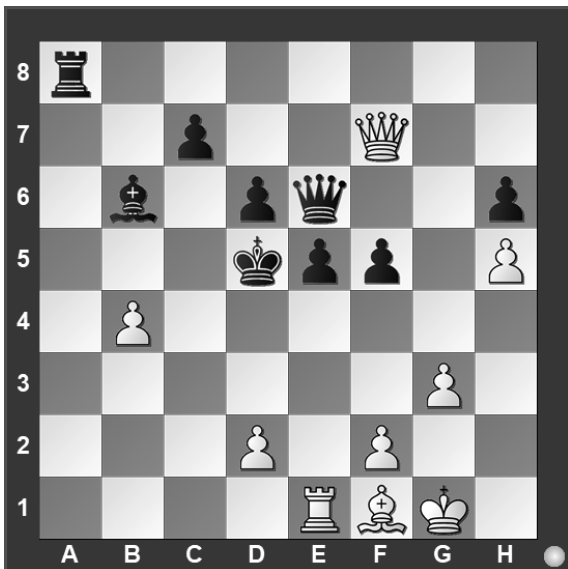
#10. White to move



What is White's best move?

- a) ♖c1
- b) ♕×e4
- c) ♕a4
- d) b5

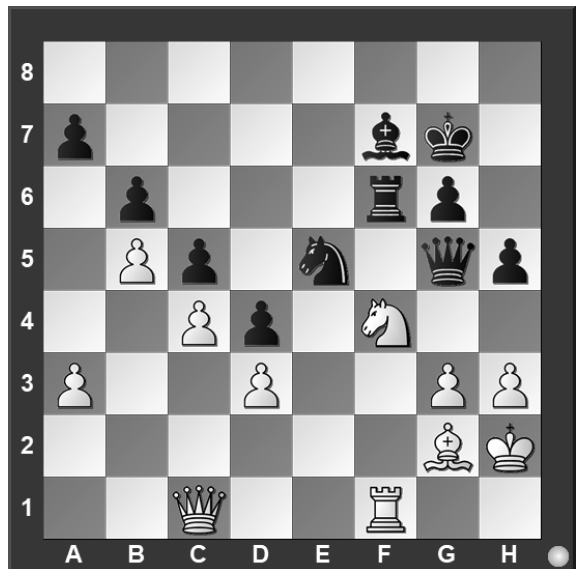
#11. White to move



What is White's best move?

- a) ♔×d6
- b) ♕g2
- c) ♕c4
- d) ♖c1

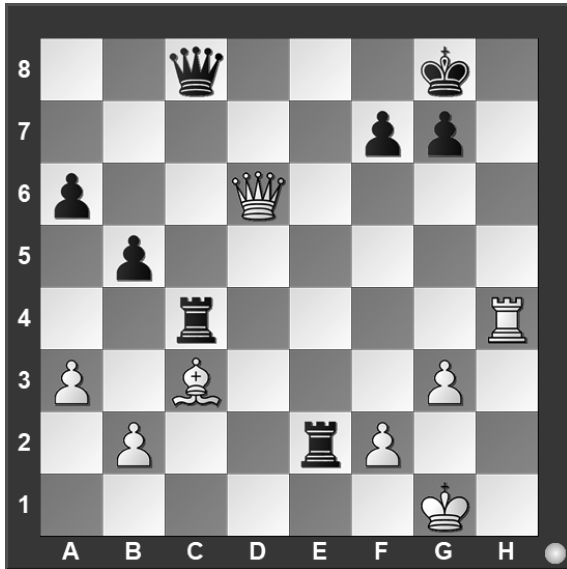
#12. White to move



What is White's best move?

- a) ♘e6
- b) ♘×h5
- c) ♔e1
- d) ♕e4

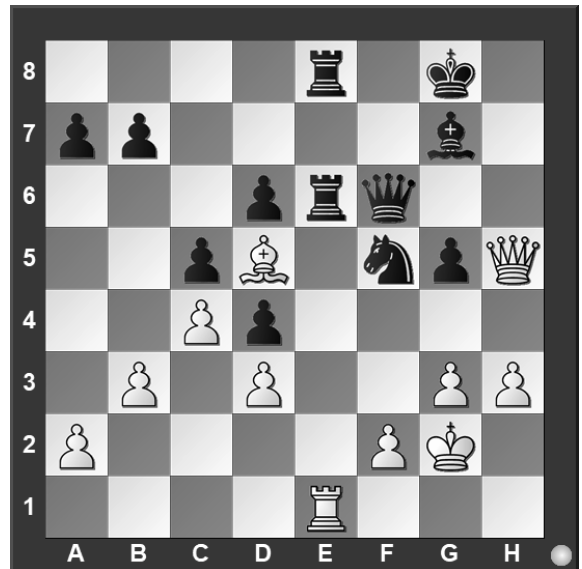
#13. White to move



If White can checkmate Black in three moves, what is the *first* move?

- a) ♖xc4
- b) ♖h8
- c) ♗e5
- d) ♗xg7

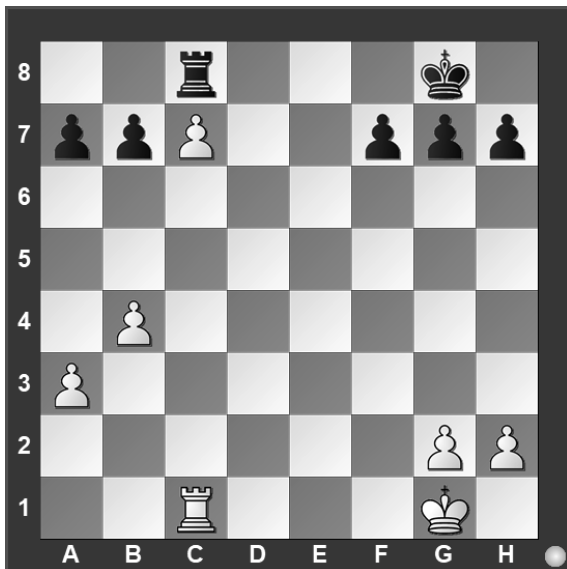
#14. White to move



What is White's best move?

- a) ♖xe6
- b) ♗xe6
- c) ♗xe8
- d) h4

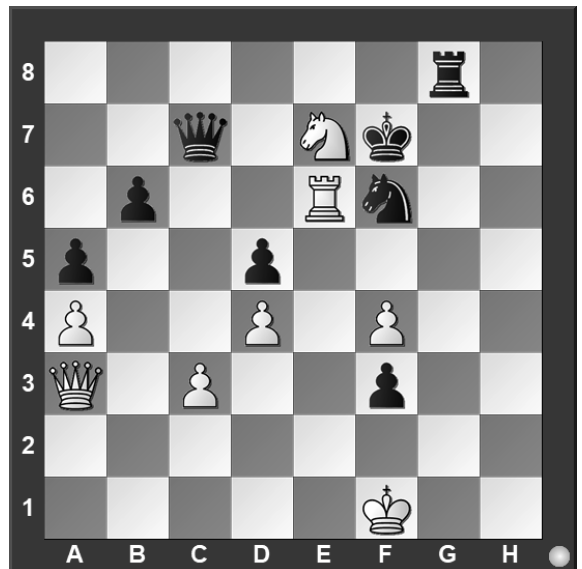
#15. White to move



What is White's best move?

- a) ♖f2
- b) ♖d1
- c) b5
- d) a4

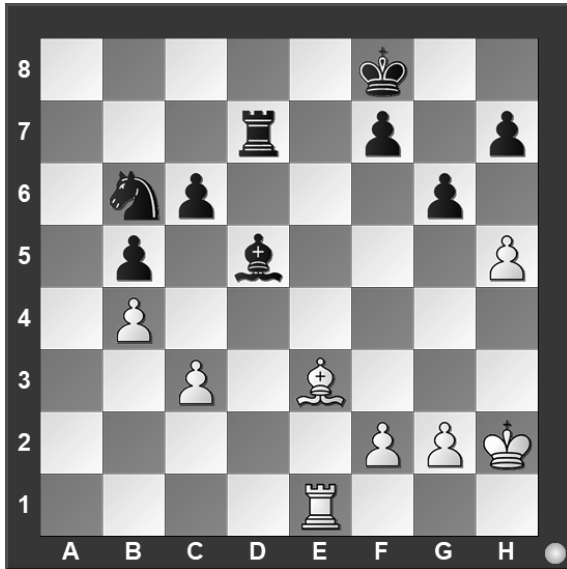
#16. White to move



What is White's best move?

- a) ♖xf6
- b) ♖c6
- c) ♗xg8
- d) f5

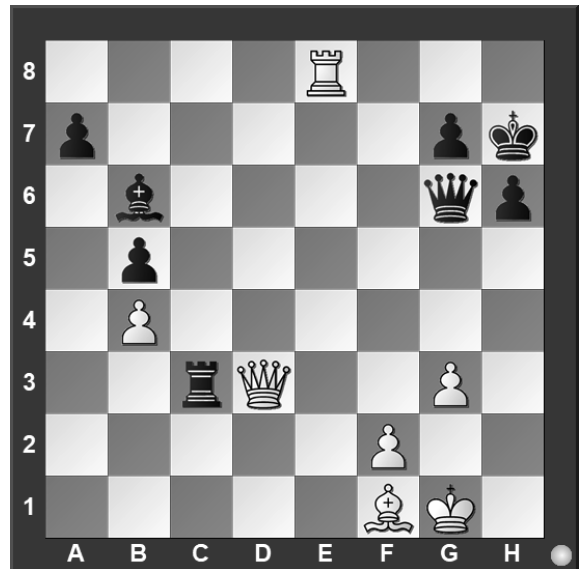
#17. White to move



What is White's best move?

- a)  $\text{Q} \times \text{b6}$
- b)  $\text{Q} \text{h6}$
- c)  $\text{Q} \text{c5}$
- d)  $\text{h} \times \text{g6}$

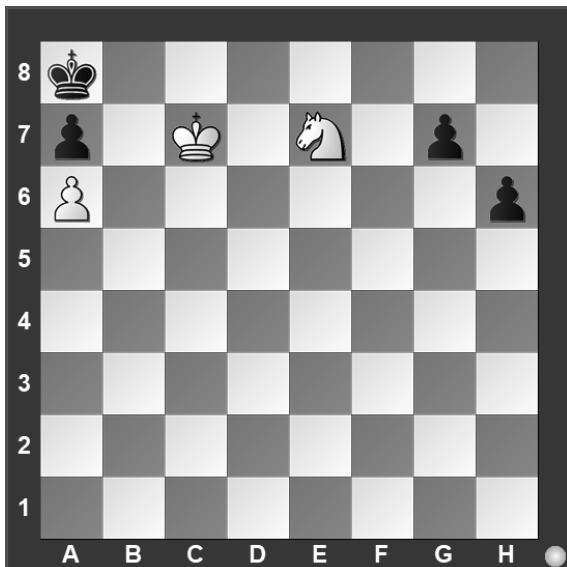
#18. White to move



What is White's best move?

- a)  $\text{Q} \times \text{c3}$
- b)  $\text{Q} \times \text{g6}$
- c)  $\text{Q} \times \text{b5}$
- d)  $\text{R} \text{h8}$

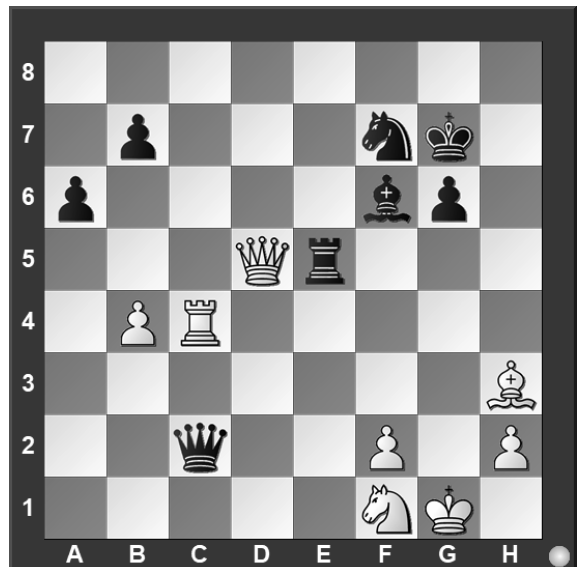
#19. White to move



How many moves does it take to checkmate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate

#20. White to move



What piece should White capture?

- a) Queen
- b) Rook
- c) Knight
- d) pawn





**University Interscholastic League  
A+ Chess Puzzle Contest  
2020-2021 Spring — Grades 6, 7, & 8**

**ANSWER KEY**

**Test**

- |       |       |
|-------|-------|
| 1. B  | 11. C |
| 2. A  | 12. A |
| 3. C  | 13. B |
| 4. B  | 14. C |
| 5. A  | 15. B |
| 6. C  | 16. A |
| 7. A  | 17. B |
| 8. D  | 18. D |
| 9. B  | 19. C |
| 10. B | 20. C |

**Tiebreaker**

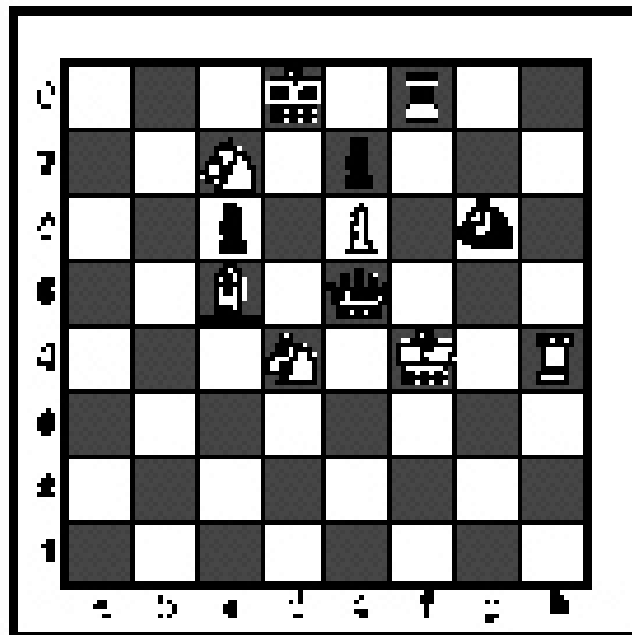
- |      |      |
|------|------|
| 1. D | 5. C |
| 2. C | 6. D |
| 3. C | 7. B |
| 4. B | 8. A |

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League

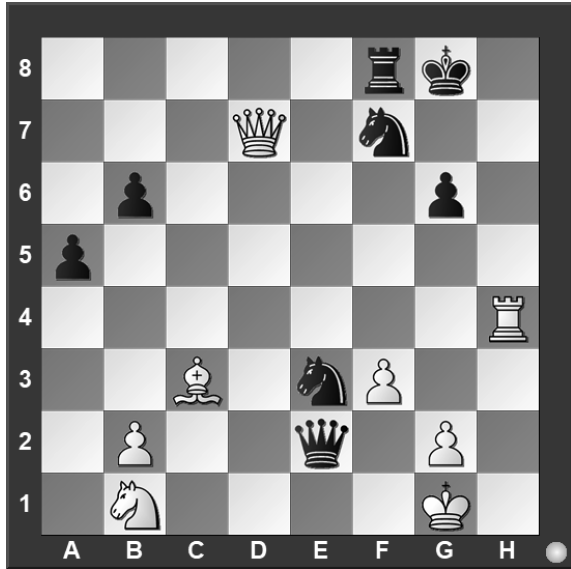


# Chess Puzzle Solving

## TIEBREAKER - ALL GRADES

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

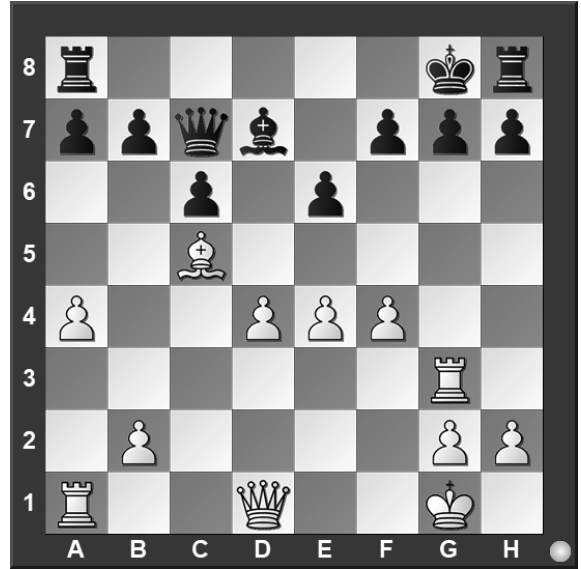
#1. White to move



What is White's best move?

- a) ♔d4
- b) ♔d2
- c) ♔h3
- d) ♖h8

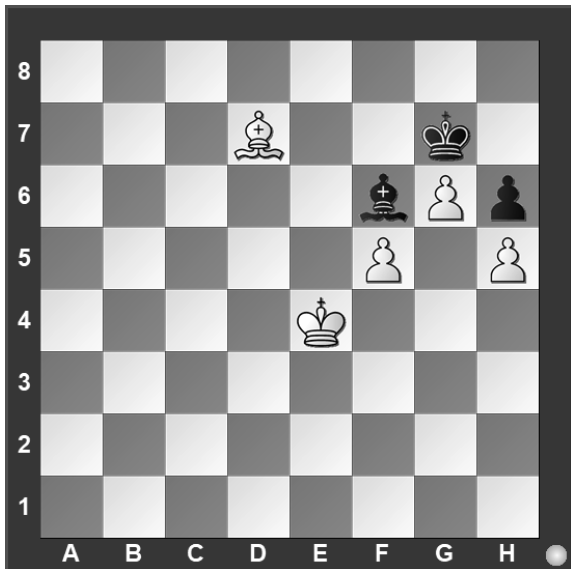
#2. White to move



If White can checkmate Black in three moves, what's the *first* move?

- a) ♖g4
- b) ♖h5
- c) ♖xg7
- d) ♖aa3

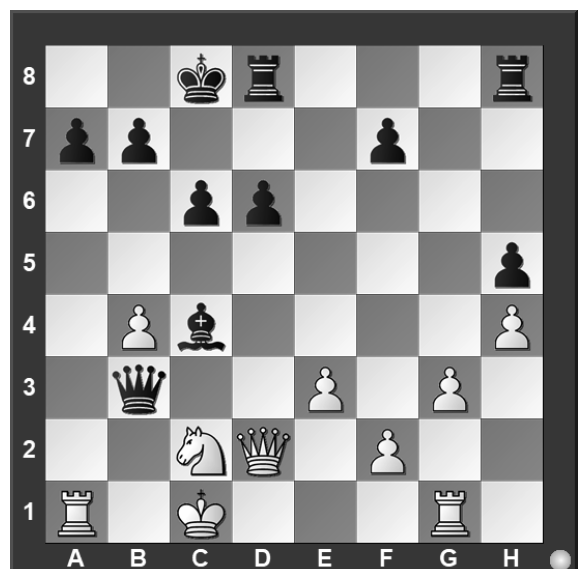
#3. White to move



With the best play, what is the outcome of the game?

- a) White wins.
- b) Black wins.
- c) Draw.
- d) It is not possible to tell.

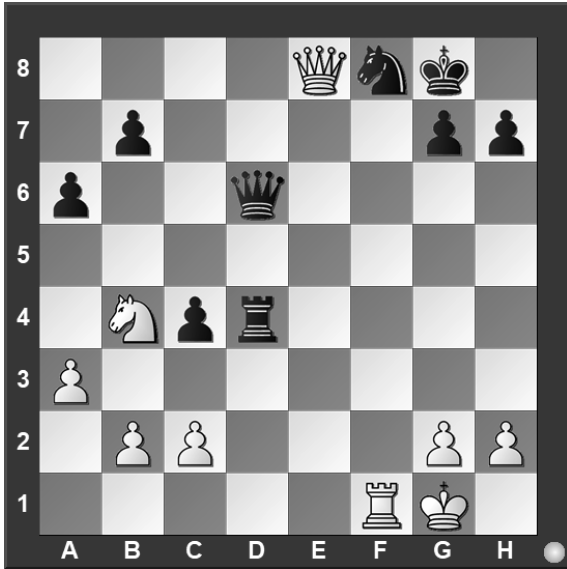
#4. White to move



What is White's best move?

- a) ♖x a7
- b) ♖a3
- c) ♖b1
- d) ♘d4

#5. White to move



How many moves does it take to checkmate Black?

- a) 1
- b) 2
- c) 3
- d) There is no checkmate

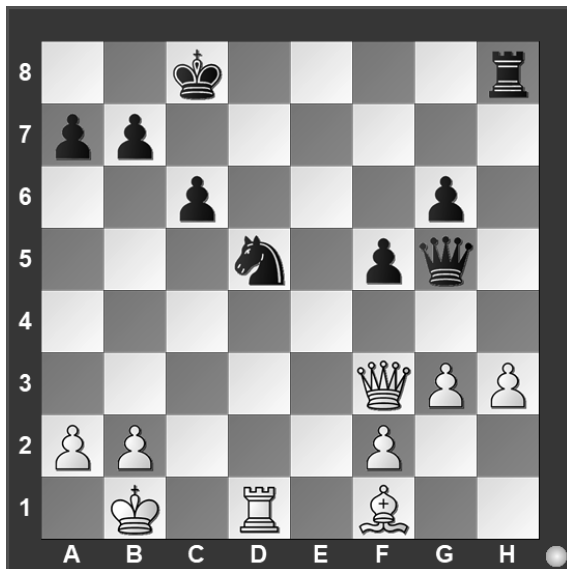
#6. White to move



What is White's best move?

- a) ♔d7
- b) ♔xc4
- c) ♔b3
- d) ♖c3

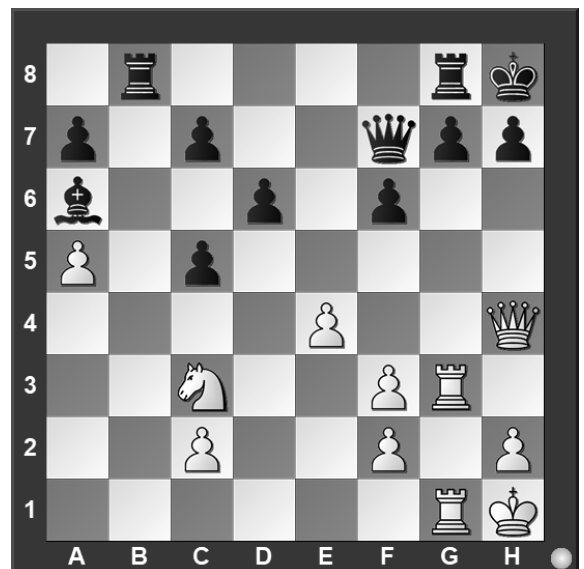
#7. White to move



What is White's best move?

- a) ♖c1
- b) ♖xd5
- c) ♙c4
- d) h4

#8. White to move



What is White's best move?

- a) ♔xh7
- b) ♖h3
- c) ♘d5
- d) f4

Contestant Number \_\_\_\_\_

Contestant Name \_\_\_\_\_  
(to be filled in after judging)

# UIL A+ Creative Writing Evaluation Sheet

## Elementary

Evaluation criteria are listed in the order of importance. Circle score rating in each of the three major areas of *creativity & interest*, *organization*, and *correctness of style* and tally the points.

(60%) 1 2 3 4 5 6 7 8 9 10 11 12

**CREATIVITY & INTEREST** Interest depends primarily upon substance. It depends next upon clarity and upon including specific details and examples, which individualize the story as an outgrowth of the writer's character and experience.

(30%) 1 2 3 4 5 6

**Organization** A well-organized story will present ideas in a logical and coherent manner.

(10%) 1 2

**Correctness of Style** Grammatical correctness of style includes avoiding errors in sentence structure, punctuation, grammar, spelling and word usage.

**TOTAL SCORE:** \_\_\_\_\_/20

### CONSTRUCTIVE COMMENTS FOR THE CONTESTANT

Please read "Instructions for the Judges" before evaluating second grade Creative Writing contestants' papers. Please make your comments using language understandable to the contestant and make all comments constructive and supportive. While judges are to consider all three elements in selecting the most effective compositions, they should weigh creativity and interest more than organization, and organization more than correctness of style.

**Judge's signature** \_\_\_\_\_



# A+ Creative Writing Contest

INVITATIONAL

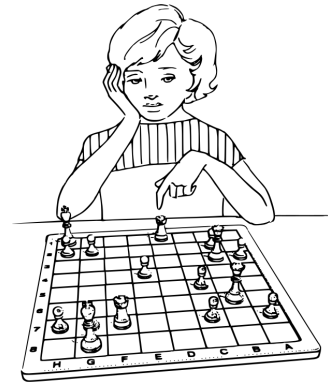
GRADE 2

2020-2021

Write a story on your own paper. You must write about at least one of the things shown on this page. You may use as many of the pictures as you want.



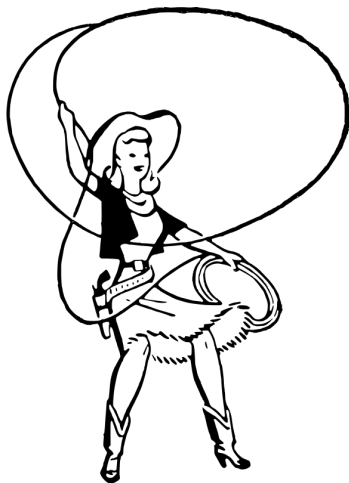
piano



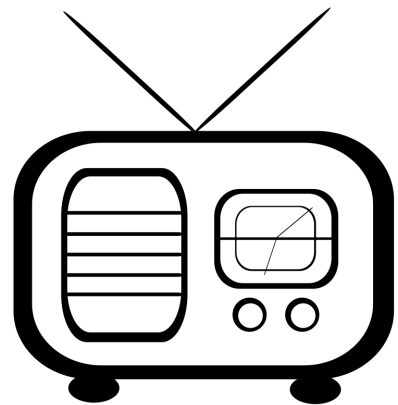
board game



backpack



cowgirl



radio



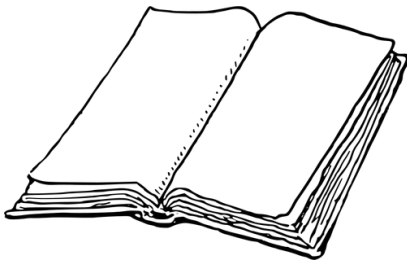
# A+ Creative Writing Contest

FALL/WINTER DISTRICT

GRADE 2

2020-2021

Write a story on your own paper. You must write about at least one of the things shown on this page. You may use as many of the pictures as you want.



book



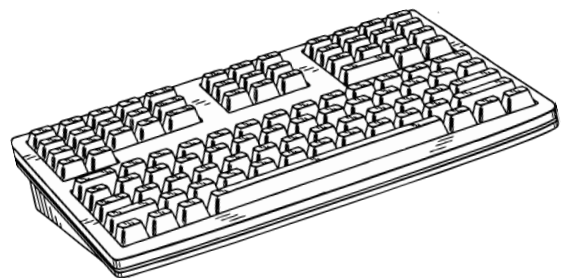
ship



tractor



chef



keyboard



# A+ Creative Writing Contest

SPRING DISTRICT

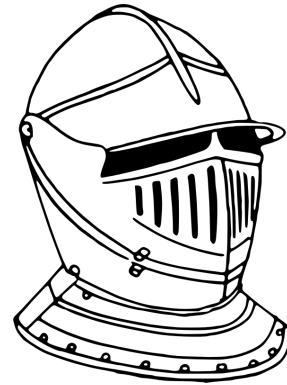
GRADE 2

2020-2021

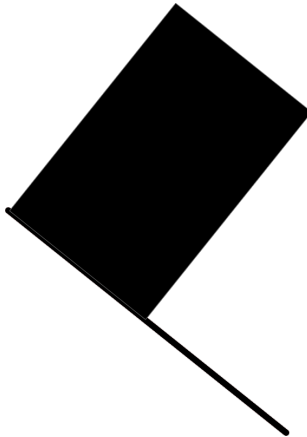
Write a story on your own paper. You must write about at least one of the things shown on this page. You may use as many of the pictures as you want.



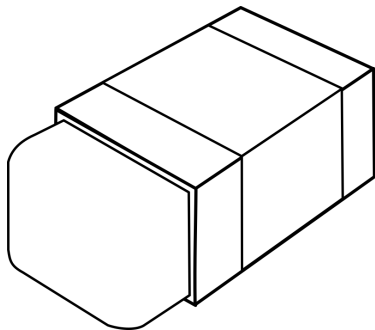
garden



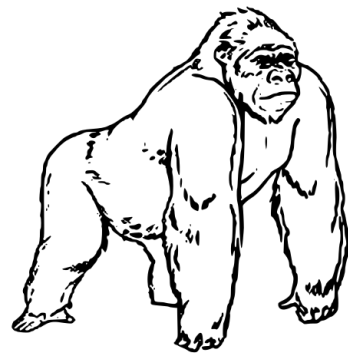
helmet



flag



eraser



gorilla



**CONTESTANT NUMBER:**

**FOR GRADER USE ONLY**

Score Test Below:

\_\_\_\_\_ out of 120. Initials \_\_\_\_\_

\_\_\_\_\_ out of 120. Initials \_\_\_\_\_

**Papers contending to place:**

\_\_\_\_\_ out of 120. Initials \_\_\_\_\_



**University Interscholastic League  
A+ Dictionary Skills Contest • Answer Sheet**

*Write your contestant number in the upper right corner, and circle your grade below.*

**Circle Grade Level:                      5                      6                      7                      8**

1.    A    B    C    D

2.    A    B    C    D

3.    A    B    C    D

4.    A    B    C    D

5.    A    B    C    D

6.    A    B    C    D

7.    A    B    C    D

8.    A    B    C    D

9.    A    B    C    D

10.   A    B    C    D

11.   A    B    C    D

12.   A    B    C    D

13.   A    B    C    D

14.   A    B    C    D

15.   A    B    C    D

16.   A    B    C    D

17.   A    B    C    D

18.   A    B    C    D

19.   A    B    C    D

20.   A    B    C    D

21.    A    B    C    D

22.    A    B    C    D

23.    A    B    C    D

24.    A    B    C    D

25.    A    B    C    D

26.    A    B    C    D

27.    A    B    C    D

28.    A    B    C    D

29.    A    B    C    D

30.    A    B    C    D

31.    A    B    C    D

32.    A    B    C    D

33.    A    B    C    D    E    F    G    H

34.    A    B    C    D    E    F    G    H

35.    A    B    C    D    E    F    G    H

36.    A    B    C    D    E    F    G    H

37.    A    B    C    D    E    F    G    H

38.    A    B    C    D    E    F    G    H

39.    A    B    C    D    E    F    G    H

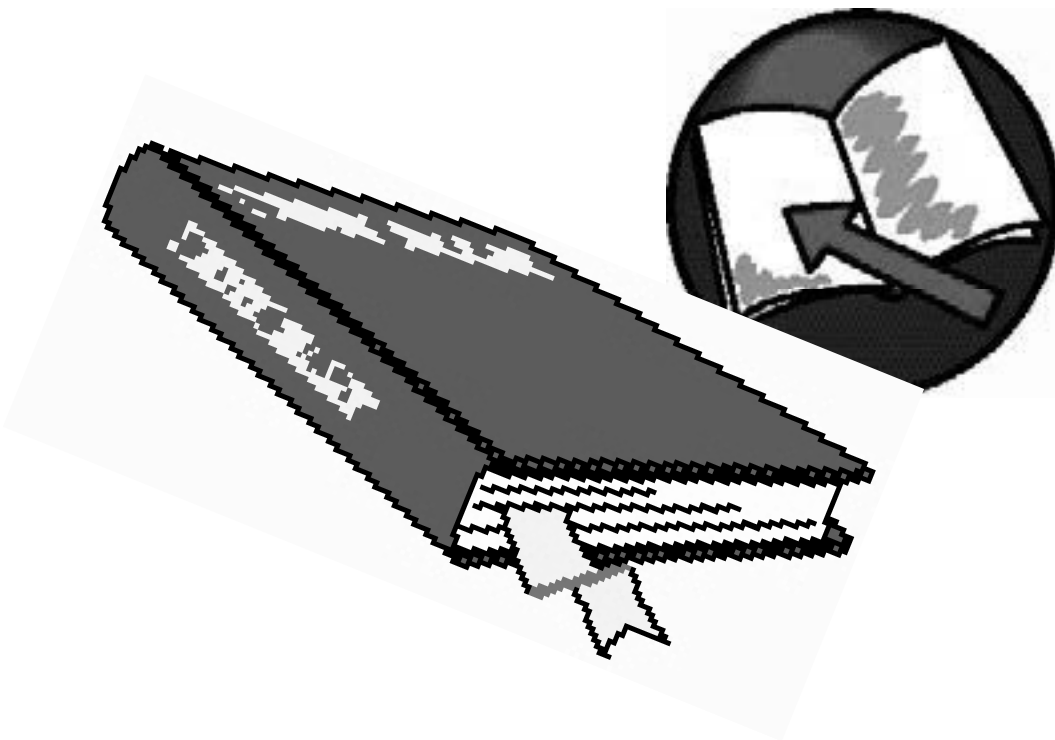
40.    A    B    C    D    E    F    G    H

**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Dictionary Skills

grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**University Interscholastic League  
2020-21 Dictionary Skills Contest  
Invitational District Test — Grades 5 & 6**

1. Someone described as being very gaunt, would describe them as being very what?  
A. Heavy  
B. Emotional  
C. Thin  
D. Distracted
2. A main sequence refers to a group of what?  
A. Farm animals  
B. Stars  
C. Flowers  
D. Cars
3. How many days are in a fortnight period?  
A. 12  
B. 40  
C. 14  
D. 7
4. How many bunches of feathers does a great horned owl have?  
A. 2  
B. 3  
C. 4  
D. 5
5. What year was Yemen divided into independent states?  
A. 1985  
B. 1992  
C. 1980  
D. 1990
6. Based on the word history of money, what was the name of goddess the word was originated from?  
A. Venus  
B. Jupiter  
C. Juno  
D. Star
7. Regicide is the killing of a what?  
A. Queen  
B. King  
C. Prince  
D. Princess
8. What part of the body would you find a forelock growing?  
A. Toes  
B. Front of the head  
C. Bottom of the foot  
D. Under the arm
9. All of the following are politicians, **EXCEPT**?  
A. Stephen Arnold Douglas  
B. Henry Clay  
C. William Marcy Tweed  
D. Mary Cassatt

10. A painted lady is the name of what insect?  
A. Butterfly  
B. Grasshopper  
C. Praying mantis  
D. Beetle
11. What year was New Amsterdam renamed New York by the British?  
A. 1625  
B. 1664  
C. 1652  
D. 1633
12. A penny is a British unit of money that was formerly equal how much of a pound?  
A. 1/100  
B. 1/240  
C. 1/300  
D. 1/200
13. How many sides does a pentagon have?  
A. 7  
B. 8  
C. 5  
D. 6
14. What form of transportation are you most likely to find a periscope?  
A. Bicycle  
B. 18-wheeler  
C. Submarine  
D. Scooter
15. The term "Commonwealth" is used by the following states, **EXCEPT**?  
A. Kentucky  
B. Pennsylvania  
C. Virginia  
D. Iowa
16. Which of the following is used to describe a person who stirs up the people especially to hatred or violence?  
A. Yogi  
B. Rabble-rouser  
C. Integrationist  
D. Superintendent
17. What shape does the group of stars Pegasus form?  
A. Square  
B. Triangle  
C. Oval  
D. Octagon
18. Which of the following is considered a trademark?  
A. Mouse pad  
B. Crock-Pot  
C. Cable  
D. Nail polish
19. What was the age of the person that invented the term googol?  
A. 40  
B. 18  
C. 9  
D. 27
20. Where is the town of Matlock located?  
A. England  
B. Switzerland  
C. Bulgaria  
D. Armenia

21. What does a psychrometer measure?  
A. mass of sand  
B. speed  
C. water vapor  
D. length
22. Edgar Degas lived between what years?  
A. 1910-1970  
B. 1776-1850  
C. 1940-2010  
D. 1834-1917
23. Which of the following words would be used to describe something being dull?  
A. snappy  
B. prosaic  
C. huffy  
D. rickety
24. Where would you find a crypt?  
A. underground  
B. on top of a building  
C. in an attic  
D. in a body of water
25. A PT boat is equipped with all of the following **EXCEPT**?  
A. depth charges  
B. machine guns  
C. crane missiles  
D. torpedoes
26. What is another name for a house sparrow?  
A. Trained sparrow  
B. English sparrow  
C. Home sparrow  
D. Rounded sparrow
27. How many times a year does an event happen if it is considered biannual?  
A. once  
B. three  
C. four  
D. twice
28. What is the abbreviation used for hundredweight?  
A. HD  
B. hwy  
C. WH  
D. cwt
29. How many sides does a Brazil nut have?  
A. 0  
B. 3  
C. 4  
D. 2
30. Which of the following is NOT an island?  
A. Lewis and Harris  
B. Kyushu  
C. Hillingdon  
D. Lesser Antilles

31. A telegraph sends messages by using what?

- A. code
- B. pictures
- C. light
- D. letters

32. A bigot won't listen to what?

- A. instrumental music
- B. nature calls
- C. different beliefs
- D. snoring

**Match each of the following words to its correct meaning:**

- |                  |   |
|------------------|---|
| _____ 33. comely | A. to offer for sale                        |
| _____ 34. pane   | B. a small wooden container or barrel       |
| _____ 35. vend   | C. too long-winded or wordy                 |
| _____ 36. firkin | D. pleasing to the eye                      |
| _____ 37. sunder | E. a long loose heavy overcoat              |
| _____ 38. prolix | F. a former British coin worth four pennies |
| _____ 39. goad   | G. a piece, section or side of something    |
| _____ 40. ulster | H. to break or force apart or in two        |

**University Interscholastic League  
2020-21 Dictionary Skills Contest  
Invitational Test — Grades 5 & 6**

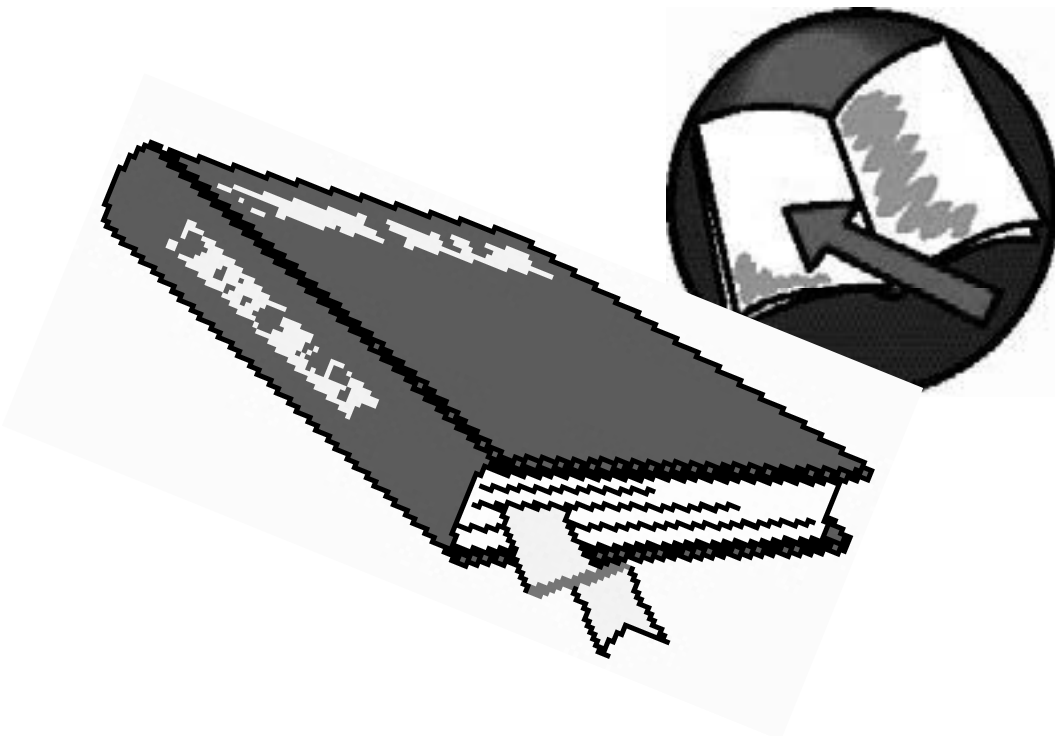
**Answer Key**

- |       |       |
|-------|-------|
| 1. C  | 21. C |
| 2. B  | 22. D |
| 3. C  | 23. B |
| 4. A  | 24. A |
| 5. D  | 25. C |
| 6. C  | 26. B |
| 7. B  | 27. D |
| 8. B  | 28. D |
| 9. D  | 29. B |
| 10. A | 30. C |
| 11. B | 31. A |
| 12. B | 32. C |
| 13. C | 33. D |
| 14. C | 34. G |
| 15. D | 35. A |
| 16. B | 36. B |
| 17. A | 37. H |
| 18. B | 38. C |
| 19. C | 39. F |
| 20. A | 40. E |

**FALL/WINTER DISTRICT 2020-2021**  
**A+ ACADEMICS**



University Interscholastic League



# Dictionary Skills

grades 5 & 6

**DO NOT OPEN TEST**  
**UNTIL TOLD TO DO SO**



**University Interscholastic League  
2020-21 Dictionary Skills Contest  
Fall/Winter District Test — Grades 5 & 6**

1. What is the lowest card in the game pinochle?  
A. 12  
B. 11  
C. 9  
D. 5
2. What is the name of the method that uses force above the navel with the fist?  
A. splint  
B. shrug off  
C. cardiopulmonary resuscitation  
D. Heimlich maneuver
3. What would one use a samovar for?  
A. to cut vegetables  
B. to start a car  
C. to pour tea  
D. to change the tv channel
4. Which of the following is a name for a left-handed person?  
A. patroon  
B. south paw  
C. cloven hoof  
D. raptor
5. When is Trinity Sunday?  
A. the eighth Sunday after Easter  
B. the first Sunday after Easter  
C. the ninth Sunday after Easter  
D. the Sunday after Easter
6. Where is one ordered to appear if they are given a subpoena?  
A. church  
B. doctor's office  
C. court  
D. school
7. What was the password that Ali Baba used to enter the cave of the Forty Thieves?  
A. Alakazam  
B. Abracadabra  
C. Shazam  
D. Sesame
8. When does rapid eye movement occur?  
A. while sleeping  
B. when bright light hits the eye  
C. after using eyes drops  
D. when you get a new pair of glasses
9. All of the following states are located in the mountain time zone **EXCEPT**?  
A. Colorado  
B. Nevada  
C. Wyoming  
D. Arizona
10. How many numbers of bells does a ship give at 5:00 a.m.?  
A. 2  
B. 3  
C. 8  
D. 6

11. What type of writing does a stenographer do?  
A. song lyrics  
B. movie scripts  
C. map directions  
D. shorthand
12. The term maverick came to be used to name cattle that was what?  
A. sick  
B. dead  
C. unbranded  
D. pregnant
13. What school subject would one most likely use a vinculum?  
A. math  
B. history  
C. writing  
D. P.E.
14. What mountains are usually thought of as a dividing line between Europe and Asia?  
A. Cumbrian Mountains  
B. Ural Mountains  
C. Drakensberg Mountains  
D. Andes Mountains
15. What is another name for a pedagogue?  
A. teacher  
B. actor  
C. gamer  
D. barista
16. What happened to Jesus on the night of the Last Supper?  
A. He got lost  
B. He was betrayed  
C. He choked on his food  
D. He saved an animal
17. Someone described as a glutton does too much of what?  
A. sleeping  
B. lying  
C. eating  
D. talking
18. Which of the following is something that would occur in your body after death?  
A. gentility  
B. precipitation  
C. agglomeration  
D. rigor mortis
19. According to the legend of the Flying Dutchman, what is he condemned to do until judgment day?  
A. roam the forest  
B. sail the seas  
C. fly an airplane in the dark sky  
D. dig for every treasure known to man
20. All of the following elements make up German Silver **EXCEPT**?  
A. Iron  
B. Copper  
C. Nickel  
D. Zinc
21. Old Norse was the Germanic Language of the Scandinavian people before what year?  
A. 1502  
B. 1530  
C. 1350  
D. 1489

22. According to the history of a tuxedo, it can be traced back to the name of a what?
- A. animal
  - B. car
  - C. flower
  - D. village
23. Where are you most likely to find a throng?
- A. a bathroom
  - B. a concert
  - C. a car
  - D. a dog house
24. What is the abbreviation for base exchange?
- A. BEX
  - B. BAS
  - C. BX
  - D. BAX
25. Where was the pottery delft first made?
- A. Mexico
  - B. Spain
  - C. the Netherlands
  - D. China
26. All of the following are breeds of cattle **EXCEPT**?
- A. Holstein
  - B. Thoroughbred
  - C. Hereford
  - D. Shorthorn
27. Who is most likely to be given a perquisite?
- A. a pilot
  - B. a waitress
  - C. a dog
  - D. an engineer
28. How many wheels does a shay have?
- A. 2
  - B. 4
  - C. 1
  - D. 3
29. Which of the following rivers is **NOT** longer than 1200 miles?
- A. Parana River
  - B. Salween River
  - C. Mackenzie River
  - D. Madeira River
30. When is the Christian festival Epiphany observed?
- A. January 6<sup>th</sup>
  - B. March 25<sup>th</sup>
  - C. January 16<sup>th</sup>
  - D. February 6<sup>th</sup>
31. What does the call of a kookaburra resemble?
- A. a vibrating shriek
  - B. a bark
  - C. a soft cry
  - D. loud laughter
32. What part of the body would one have crow's feet?
- A. the ankle
  - B. the eyes
  - C. the thumb
  - D. the lower back

**Match each of the following words to its correct meaning:**

- |                      |  |
|----------------------|--|
| _____ 33. crux       | A. a tall narrow mirror                |
| _____ 34. pier glass | B. to hang or let hang loosely         |
| _____ 35. sobriquet  | C. very hot and usually dry            |
| _____ 36. gesso      | D. the most important point            |
| _____ 37. loll       | E. a material like plaster used in art |
| _____ 38. anew       | F. to confine especially during a war  |
| _____ 39. torrid     | G. a descriptive name of phrase        |
| _____ 40. intern     | H. over again                          |

**University Interscholastic League  
2020-21 Dictionary Skills Contest  
Fall/Winter District — Grades 5 & 6**

**Answer Key**

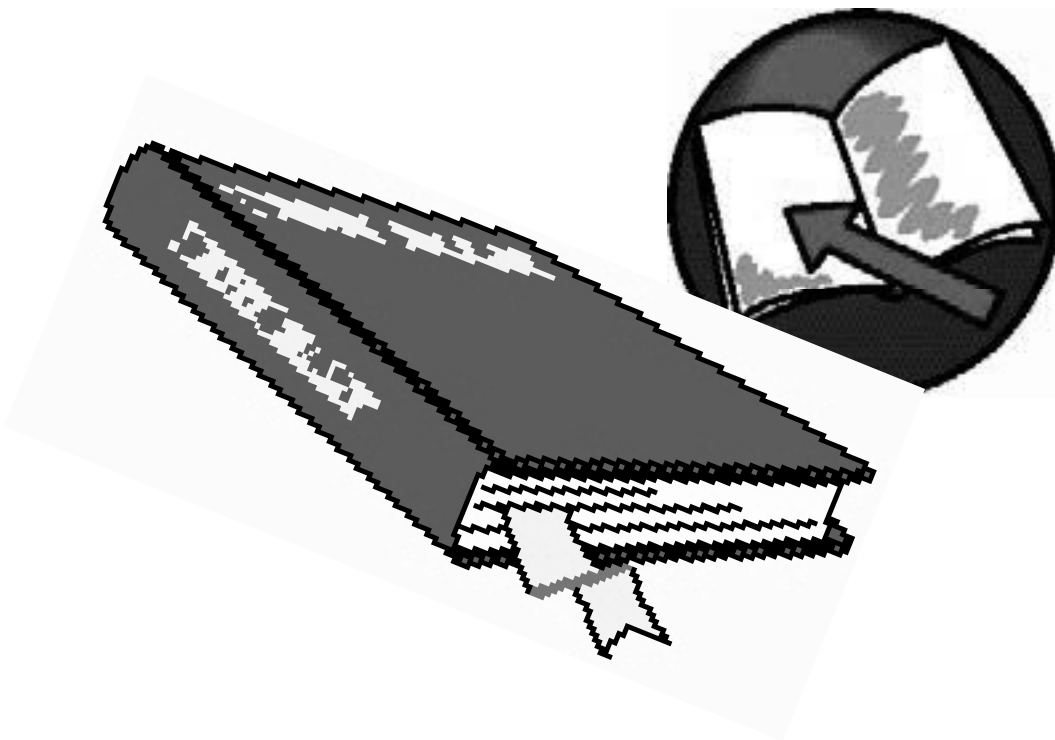
- |       |       |
|-------|-------|
| 1. C  | 21. C |
| 2. D  | 22. D |
| 3. C  | 23. B |
| 4. B  | 24. C |
| 5. A  | 25. C |
| 6. C  | 26. B |
| 7. D  | 27. B |
| 8. A  | 28. A |
| 9. B  | 29. C |
| 10. A | 30. A |
| 11. D | 31. D |
| 12. C | 32. B |
| 13. A | 33. D |
| 14. B | 34. A |
| 15. A | 35. G |
| 16. B | 36. E |
| 17. C | 37. B |
| 18. D | 38. H |
| 19. B | 39. C |
| 20. A | 40. F |

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Dictionary Skills

grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**University Interscholastic League  
2020-21 Dictionary Skills Contest  
Spring District Test — Grades 5 & 6**

1. What type of instrument is a conga?  
A. piano  
B. drum  
C. guitar  
D. horn
2. In the military, KP is the duty of handling what?  
A. aircrafts  
B. bedding  
C. meals  
D. weapons
3. Which of the following is a term for a person that takes part in a lawsuit?  
A. philatelist  
B. petty officer  
C. litigant  
D. evacuee
4. All of the following are trademarks **EXCEPT**?  
A. Kleenex  
B. Crock-Pot  
C. PG  
D. Waffle Iron
5. What day is Rogation Day?  
A. January 3<sup>rd</sup>  
B. July 24<sup>th</sup>  
C. December 13<sup>th</sup>  
D. April 25<sup>th</sup>
6. What is the quotient of dividing 20 by 10?  
A. 2  
B. 5  
C. 10  
D. 6
7. Around what time was the Air Force branch Waf discontinued?  
A. 1930s  
B. 1920s  
C. 1970s  
D. 2000s
8. Which of the following is a disease that is transmitted by ticks?  
A. Lyme disease  
B. cholera  
C. river blindness  
D. malaria
9. What type of animal is a krait?  
A. bird  
B. snake  
C. mouse  
D. buffalo
10. What is the Medieval Latin name for Scotland?  
A. Scots  
B. Scotlos  
C. Scotia  
D. Scottsdale

11. Where did a forty-niner go in the gold rush of 1849?  
A. California  
B. Colorado  
C. New York  
D. North Carolina
12. Fortran is a language used for programming what?  
A. televisions  
B. x-ray machines  
C. radios  
D. computers
13. According to the history of the word, all of the following were original meanings of magazine **EXCEPT**?  
A. storehouse  
B. cellar  
C. cape  
D. granary
14. What causes incandescence from an object?  
A. high heat  
B. low heat  
C. sunlight  
D. pressure
15. How many characters to the inch does a pica provide?  
A. 5  
B. 7  
C. 10  
D. 11
16. According to medieval legend, who found the Holy Grail?  
A. John Charles Fremont  
B. Hadrian  
C. Galahad  
D. Edward Braddock
17. What is a demijohn enclosed in?  
A. wire  
B. a basket  
C. glass  
D. mud
18. Which of the following could be used to name someone that wants to bring peace between two friends?  
A. a go-between  
B. a suburbanite  
C. a consul  
D. a socialite
19. What does ATM stand for?  
A. air tight money  
B. auto time machine  
C. active trauma membrane  
D. automatic teller machine
20. What is the name for an imaginary line along the 180<sup>th</sup> meridian named as a place where each calendar day begins?  
A. horoscope  
B. international date line  
C. hemisphere  
D. core line
21. A sea trout lives mostly in the sea but goes up rivers to do what?  
A. hibernate  
B. hunt for food  
C. breed and lay eggs  
D. hide from enemies



22. Where is an American Indian Chinook from?  
A. Oregon  
B. Colorado  
C. Kansas  
D. Idaho
23. What year did Zanzibar become independent?  
A. 1976  
B. 1963  
C. 1983  
D. 1954
24. Ptyalin is an enzyme that helps change starch into what?  
A. fat  
B. salt  
C. oxygen  
D. sugar
25. Who were known to usually be the advertisers of soap opera programs?  
A. wine distributors  
B. tobacco manufacturers  
C. tissue manufactures  
D. soap manufactures
26. How many shillings is a guinea equal to?  
A. 13  
B. 5  
C. 21  
D. 50
27. What type of beverage is made using a percolator?  
A. tea  
B. coffee  
C. milk  
D. orange juice
28. What does a joist support?  
A. a floor or ceiling  
B. a water dam  
C. a fence  
D. a bridge
29. Who was the physicist that won the Nobel Prize in 1964?  
A. William Faulkner  
B. Dorothy Mary Hodgkin  
C. Jane Addams  
D. Eugene Gladstone O'Neill
30. What is another name for a weevil?  
A. egret  
B. oxygen  
C. snout beetle  
D. red mullet
31. What color is Benedict's solution?  
A. gray  
B. purple  
C. green  
D. blue
32. A shantytown would be described as what kind of town?  
A. overpopulated  
B. poor  
C. wealthy  
D. busy

**Match each of the following words to its correct meaning:**

- |                      |  |
|----------------------|--|
| _____ 33. plait      | A. the highest point                   |
| _____ 34. put across | B. to tear apart                       |
| _____ 35. acme       | C. a group of six lines of poetry      |
| _____ 36. sestet     | D. a flat fold                         |
| _____ 37. pallid     | E. not to be left out                  |
| _____ 38. obligato   | F. to gain or communicate successfully |
| _____ 39. rive       | G. a front place or position           |
| _____ 40. fore       | H. lacking healthy color               |

**University Interscholastic League  
2020-21 Dictionary Skills Contest  
Spring District Test — Grades 5 & 6**

**Answer Key**

- |       |       |
|-------|-------|
| 1. B  | 21. C |
| 2. C  | 22. A |
| 3. C  | 23. B |
| 4. D  | 24. D |
| 5. D  | 25. D |
| 6. A  | 26. C |
| 7. C  | 27. B |
| 8. A  | 28. A |
| 9. B  | 29. B |
| 10. C | 30. C |
| 11. A | 31. D |
| 12. D | 32. B |
| 13. C | 33. D |
| 14. A | 34. F |
| 15. C | 35. A |
| 16. C | 36. C |
| 17. B | 37. H |
| 18. A | 38. E |
| 19. D | 39. B |
| 20. B | 40. G |

CONTESTANT NUMBER:

**FOR GRADER USE ONLY**

Score Test Below:

\_\_\_\_\_ out of 75. Initials \_\_\_\_\_

\_\_\_\_\_ out of 75. Initials \_\_\_\_\_

**Papers contending to place:**

\_\_\_\_\_ out of 75. Initials \_\_\_\_\_



**University Interscholastic League  
A+ Listening Contest • Answer Sheet**

*Write your contestant number in the upper right corner, and circle your grade below.*

**Circle Grade Level :            5    6    7    8**

- 1. A    B    C    D
- 2. A    B    C    D
- 3. A    B    C    D
- 4. A    B    C    D
- 5. A    B    C    D
- 6. A    B    C    D
- 7. A    B    C    D
- 8. A    B    C    D
- 9. A    B    C    D
- 10. A    B    C    D
- 11. A    B    C    D
- 12. A    B    C    D
- 13. A    B    C    D

- 14. A    B    C    D
- 15. A    B    C    D
- 16. A    B    C    D
- 17. A    B    C    D
- 18. A    B    C    D
- 19. T    F
- 20. T    F
- 21. T    F
- 22. T    F
- 23. T    F
- 24. T    F
- 25. T    F

## **UIL LISTENING CONTEST - GRADES 5 & 6 INVITATIONAL MEET 2020-2021**

### **Contest Script- "The History of Zippers"**

Have you ever wondered where some of the everyday items we use come from? They could not have always been here – think cavemen. Did they have them? If the answer is no, then someone had to invent them. Imagine houses without light bulbs, cars without tires made of rubber, and living rooms without TVs. Life wouldn't be the same. Another invention that changed our lives was the zipper. Seriously – can you imagine jeans without zippers? Where did the zipper come from and how does it work? The zipper was actually invented with contributions from several inventors who had no idea how it would impact our everyday lives.

**1:00**

The first inventor noted for his contribution is Elias Howe, Jr. Elias Howe is generally known as the inventor of the sewing machine. Although he was not the first person to invent the sewing machine, he was able to make specific improvements to the earlier attempts including a needle with an eye at the point instead of the head, a shuttle operating beneath the cloth to form a locking stitch, and an automatic feed to make moving the cloth through the machine easier. On September 10, 1846, he was awarded the first United States patent for a sewing machine using the lock stitch design. Sadly, it was not an instant success. He moved to England to try to improve it for use with leather and similar materials. When he returned to the United States, he found that I.M. Singer had copied his design and was making and selling his sewing machine.

**2:00**

After a long legal battle, Howe established his patent rights and soon his invention revolutionized the garment industry. It was during this time that he realized the need for a way to temporarily open and close openings in the cloth. In 1851, Elias Howe received a patent for an "Automatic, Continuous, Clothing Closure." He did not pursue it very far because he had many other projects, and, as a result, it did not take off. His invention was not like zippers of today. Instead it was more like a fancy drawstring.

Forty-four years later, inventor Whitcomb Judson (1846–1909) gave it a try. Whitcomb Judson first began making inventions around 1888 or 1889. He focused mainly at that time on inventions to improve street railway cars. In 1889, he obtained six patents related to street railway cars running on compressed air. This did not bring him much success. It was not until he began designing a metal fastening device that he called the Clasp Locker that he became recognized for his inventions. He received a patent for his invention on November 7, 1891. This invention was not called a zipper either, and it was not originally used on clothing. Whitcomb's "Clasp Locker" or "Unlocker for Shoes" was a complicated hook-and-eye shoe fastener with an arrangement of hooks and eyes run by a guide for closing and opening the shoe.

### **3:00**

It is said that one of the reasons he invented it was because he hated the time and effort it took to fasten high button boots that were in style during his day. His patents also mentioned possible use for corsets, gloves, mail bags, and anything that had two adjacent parts that needed to be connected. Unlike Elias Howe, Whitcomb marketed his "Clasp Locker" and got credit for being the "inventor of the zipper." Judson's first partner in his shoe fastener venture was Harry Earle of Minneapolis, Minnesota. Judson worked as a traveling agent for the Harry L. Earle Manufacturing Company at the time. Earle attempted to raise money to promote the invention, but he wasn't successful because of the limited function of the invention.

In 1893, Judson exhibited his new invention at the Chicago World's Fair. He formed a new partnership with Colonel Lewis Walker and Harry L. Earle and opened a company called the Universal Fastener Company to manufacture his new invention. The Universal Fastener Company started out in Chicago and then moved to Elyria, Ohio. It later moved to Pennsylvania and finally to Hoboken, New Jersey. Eventually the name changed to Automatic Hook and Eye Company. Sadly, even though Whitcomb Judson made a good attempt and received the title of inventor of the zipper, he never made a truly practical device that could be used on any type of material or clothing.

### **4:00**

5:00

It wasn't until a Swedish-born electrical engineer named Gideon Sundback came along that the zipper became really popular. Gideon had originally been hired to work for the Universal Fastener Company. He was a skilled designer and happened to be married to the plant manager's daughter Elvira. He decided to work on improving the Judson fastener. His wife died in 1911, and he filled his long hours alone by working at the design table. By 1913, he came up with what would become the modern zipper. His new and improved system compacted the number of fastening elements from four per inch to 10. It also had two rows of teeth that faced each other. These teeth could be pulled into a single strand using a sliding element or opened by sliding the element the opposite direction. He called it the "Separable Fastener" and was issued a patent in 1917. Sundback also created a machine that could manufacture the zipper chain at the rate of a few hundred feet of fastener per day. He later changed the name from "Separable Fastener" to "Talon".

When the B.F. Goodrich company decided to use the fastener on a new type of rubber boots the name "zipper" was actually used. Boots and tobacco pouches with a zippered closure were the main use of zippers at that time. It took almost 20 years for the fashion industry to use them regularly.

6:00

In the 1930s, a sales campaign began featuring zippers in children's clothing. The zipper was promoted as a way to provide independence and self-reliance for young children. Instead of relying on adults for help, children could zip up their own clothes and dress themselves. However, in 1937, the zipper reached new heights when it beat out the button in what has been called the "Battle of the Fly." French fashion designers had discovered the zipper and began sewing them into men's trousers. Esquire magazine declared the zipper the "Newest Tailoring Idea for Men." The next big boost for the zipper came when an improvement in design allowed it to be open on both ends, like those used on jackets. Today the zipper is used on countless objects such as clothing, luggage, sofa cushions, etc. Thousands of miles of zipper are manufactured daily to meet the needs of consumers.

**7:00**

Let's take a look at how zippers are designed today. Most zippers consist of two rows of teeth which can be made to lock together. The teeth are also referred to as elements. The slider, the part with the tab that is pulled up or down, moves along the rows of the teeth. Inside the slider is a Y-shaped channel that either meshes together or separates the opposite rows of elements depending on whether you are pulling up or down. The word zipper is considered to be onomatopoeic because of the zipping sound it makes when you move the slider. Without the two major components – the elements and the slider – a zipper simply would not zip.

**8:00**

As time has progressed, many variations have developed in zippers. In many jackets, the zipper seems to be disconnected because it is open at both ends. The user simply inserts the tab into the slider and locks it in place before pulling the tab. Some bags, suitcases, and backpacks have zippers that are double sliders. When the two sliders are next to each other, the zipper is closed. When you pull one slider away from the other, it creates an opening allowing the bag or suitcase to open. NASA created the first airtight zippers for use in high-altitude pressure suits and space suits. These suits are capable of controlling the air pressure inside of the suit while in space. This airtight zipper is built like a standard zipper, but it has waterproof sheeting wrapped around the outside of each row of zipper teeth. When the zipper is closed, the two facing sides of plastic sheeting are squeezed so tightly that it forms a seal. Because the fit must be so tight, the airtight zippers are very stiff and don't have much flexibility or stretch. They are also hard to open and close. This type of zipper can now be found on scuba diving dry suits, ocean survival suits, and hazmat suits.

There are many companies that manufacture zippers. When Gideon Sundback created the zipper (later called Talon), the Universal Fastener company changed its name to the Automatic Hook and Eye Company. Later it changed to the Hookless Fastener Company, and finally in 1937, it changed for a third time into a more streamlined name – Talon, Inc. Today, leading companies like the Tex Zipper Corp make a variety of different zippers such as Invisible Zippers, Metallic Zippers, and Plastic Zippers. However, Talon Zipper is still one of the dominant zipper companies today.



**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



**Listening**  
grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

UIL LISTENING CONTEST - GRADES 5/6  
INVITATIONAL 2020-2021  
TEST

**"The History of Zippers"**

1. Elias Howe is most famous for his invention of the
  - A. sewing machine
  - B. zipper
  - C. clothing closure
  - D. shuttle stitch
2. In what year did Whitcomb Judson obtain six patents related to street railway cars running on compressed air?
  - A. 1886
  - B. 1889
  - C. 1892
  - D. 1895
3. Who did Gideon Sundback work for?
  - A. Automatic Hook and Eye
  - B. Harry L. Earle Manufacturing
  - C. Hookless Fastener
  - D. Universal Fastener
4. How does the airtight zipper benefit NASA?
  - A. Suits with airtight zippers are capable of controlling the air pressure inside of the suit while in space.
  - B. Airtight zippers are also watertight allowing the astronaut to remain dry during a water landing.
  - C. The airtight zippers are stiff and can't be easily unzipped.
  - D. The teeth of the zippers are made of plastic, and, as a result, are not affected by the negative gravity in space.
5. When was the "Battle of the Fly"?
  - A. 1913
  - B. 1937
  - C. 1917
  - C. 1933
6. What was the advertising focus of zippers for children?
  - A. less time to close than buttons so moms could save time
  - B. no more gapping between the buttons which allowed dirt to sneak in
  - C. no more tying and retying of the shoestrings
  - D. children could zip the zippers all by themselves
7. Where did Whitcomb use his original Clasp Locker?
  - A. purses
  - B. shoes
  - C. jackets
  - D. trousers

8. In what year did Elias Howe receive a patent for an "Automatic, Continuous, Clothing Closure."
- A. 1850
  - B. 1851
  - C. 1852
  - D. 1853
9. What was Gideon Sundback's first attempt at a zipper called?
- A. Automatic Closure
  - B. Universal Fastener
  - C. Talon
  - D. Separable Fastener
10. What did the B.F. Goodrich company use a zipperlike fastener on?
- A. rubber boots
  - B. car seat covers
  - C. women's purses
  - D. army fatigues
11. Who declared the zipper the "Newest Tailoring Idea for Men"?
- A. Tex Zipper Corp
  - B. Esquire Magazine
  - C. Henry Lewis Walker
  - D. Elias Howe
12. Who was Judson's first partner in his Clasp Locker venture?
- A. I.M Singer
  - B. Elvira Goodman
  - C. Harry Earle
  - D. Judson Whitcomb
13. The teeth of the zipper are officially called the
- A. bars
  - B. slider
  - C. elements
  - D. channel
14. Why did Elias Howe and I.M. Singer battle in court?
- A. Singer copied Howe's patented design and began creating items for sale.
  - B. Howe claimed that Singer had stolen his prototype from his warehouse.
  - C. Singer believed that Howe was infringing on his patent.
  - D. Both men invented a type of zipper that was similar and wanted to patent it.
15. The Universal Fastener Company started out in Chicago, Illinois and then moved to
- A. Philadelphia, Pennsylvania
  - B. Elyria, Ohio
  - C. Akron, Ohio
  - D. Hoboken, New Jersey
16. What causes the airtight zipper used by NASA to remain airtight?
- A. It is stiff and difficult to open.
  - B. Waterproof sheeting forms a tight seal.
  - C. A double row of teeth create a two-way seal.
  - D. Nylon fabric covers the double row of teeth creating an airtight flap.
17. How many times did the Universal Fastener Company change its name?
- A. 3
  - B. 4
  - C. 5
  - D. 6

18. What was the final name of the original Universal Fastener Company?
- A. Hookless Fastener Company
  - B. Automatic Hook and Eye Company
  - C. Tex Zipper Corporation
  - D. Talon, Inc.

### **True/False**

19. When the B.F. Goodrich company decided to use a fastener on a new type of tobacco pouch the name "zipper" was actually used for the first time.
20. Even though Whitcomb Judson made a good attempt and received the title of inventor of the zipper, he never made a truly practical device that could be used on any type of material or clothing.
21. Inside the slider, the metal part that has a tab attached to it, is a Y-shaped channel that either meshes together or separates the opposite rows of elements depending on whether you are pulling up or down.
22. After French fashion designers discovered the zipper and began sewing them into men's trousers, the next big boost for the zipper came when an improvement in design allowed it to be open on both ends, like those used on jackets.
23. Sundback created a machine that could manufacture the zipper chain at the rate of twenty-four hundred feet of fastener per day.
24. Gideon Sundback was a Swedish-born electrical engineer whose wife Elvira died in 1911 causing him to partner with Colonel Lewis Walker making Separating Fasteners in an effort to forget his sadness.
25. In 1893, Judson exhibited his new invention, "Automatic, Continuous, Clothing Closure" at the Chicago World's Fair.

## **UIL LISTENING CONTEST - GRADES 5 & 6 FALL/WINTER DISTRICT 2020-2021**

### **Contest Script- "Underwater Lakes"**

Have you ever wondered what's underneath the surface of the ocean? We know that there are fish and all kinds of underwater creatures. But what else is there? We also know that the Earth is not flat. There are mountains and valleys, plains and caves. Lots of different variations and interesting landscapes. But did you know that the seafloor is just as amazing as the land above? In fact, in certain places, including the Gulf of Mexico, there are even underwater lakes and rivers? What, you might ask? How can there be lakes and rivers underwater? Let's find out!

Scientists who study the ocean are the people who know the most about it. There are several different kinds of scientists who study the ocean. The term oceanographer covers all scientists who study the ocean. Oceanography is the scientific discipline concerned with all aspects of the world's oceans and seas, including their physical and chemical properties, their origin and geologic framework, and the life forms that inhabit it. An oceanographer is a type of geoscientist.

**1:00**

Geoscientists study the formation, composition and structure of the Earth. Geological oceanography is essentially studying the geology of the ocean floor. Geological oceanographers study the structures of the sea floor and how the sea floor has been changed by processes such as volcanoes and earthquakes. Chemical oceanography is the study of physical properties of seawater, including salt and other mineral content and determining the presence of any contaminants or pollutants. Biological oceanographers and marine biologists study plants and animals in the marine, or ocean, environment.

Oceanographers tell us that these underwater lakes began over millions of years ago when the Gulf of Mexico was much shallower. Today, the Gulf of Mexico is a deep basin, filled with salty water and abundant sea life. But, during the Jurassic period, some 150 to 200 million years ago, the Gulf was shallow and isolated from the rest of the ocean by

land masses. As a result, it grew increasingly salty. Eventually, it evaporated, leaving  
**2:00** behind a salt bed in a thick layer up to 8 kilometers deep. That is right at 5 miles deep!

These salt beds still exist under the Gulf and the southern United States as far north as Arkansas. Over time, these salt beds became submerged and buried under layers of sediment that changed to shale. But, when the two tectonic plates that form this region moved apart, the salt beds were broken into two parts. The movement of the plates also resulted in the lowering of the basin floor, opening a connection to the ocean. This allowed the ocean to rush in and formed what we now know as the Gulf of Mexico. The salt layers shifted causing the shale above them to crack allowing oil, gas and brine to escape. As the water seeped up from rivers deep underground, it dissolved the salt layer leaving it weak.

Eventually, the layer collapsed and formed a depressed area. This shifting of salt beds is known as salt tectonics. A common outcome of this movement is the formation of domes where fingers of salt rise through the overlying layers of sediments and penetrate out of the seafloor. When the dome comes in contact with seawater, the salt dissolves and a localized hypersaline pool of water is formed. Because the dissolved salt makes the water denser than the water around it, it settles into the depressed area and forms  
**3:00** a river or lake. These lakes can be very small. Some are as small as a few feet across. However, some are very large – as large as a few miles long. The scientific name for these salty lakes and rivers is brine pools.

A brine pool is a large area of brine on the ocean floor. Brine, put in simple terms, means very salty water. In fact, the brine pools on the ocean floor have a salinity, or salt content, three to eight times greater than the surrounding ocean water. It's still water, but it is super salty. Why do we call them lakes? The brine does not mix easily with the seawater. Its density causes it to settle to the floor where it remains unable to rise to mix in with the less dense water. It's kind of like when oil and water are put in the same container. The water, which is heavier and denser than the oil, sinks to the bottom and stays there. When oceanographers examined the brine pools, they noticed that the pools have a

distinct surface and shoreline. This visible boundary, called a halocline, is found at the boundary between the seawater and the brine pools.

**4:00**

One scientist who used scuba gear to dive into a brine pool said that it was difficult to push into and felt thicker than the surrounding water. Submarines, upon navigating into the pool, tend to float instead of sink. The motion of a submarine can even create waves where the brine and seawater meet that remind you of waves on the shore. The brine is also so dense that fish and other marine animals can float on its surface, just like people can float on the surface of Jordan's Dead Sea. Jordan's Dead Sea is located in the Jordan Rift Valley near the country of Israel.

Not only are they dense, but deep-sea brine pools like the one in the bottom of the Gulf of Mexico often contains very high concentrations of methane. Methane is a gas, which on land, is odorless, colorless, and found mainly in very swampy, marshy areas or in very damp coal mines. The fact that methane is found on the ocean floor has long been a mystery to oceanographers because, although a significant amount of the methane that is naturally released into our atmosphere comes from the ocean, there are no known methane-producing organisms near the ocean's surface. This mystery is known as the ocean methane paradox.

**5:00**

Oceanographers have discovered that brine pools can be toxic to most marine animals. But, there are a few that thrive there. Remember that almost all other life on Earth depends on the sun for energy. However, there are some creatures that live near the shoreline of brine pools. Huge fields of mussels are found growing along the edges of some of these lakes. These mussels have adaptations that allow them to get their nutrients from bacteria as the bacteria convert the methane and other chemicals in the salty water into energy. This is good, because without sunlight, most organisms cannot grow. In and around the briny pool, only bacteria, tube worms and shrimp can survive. The mussels survive only thanks to the bacteria.

6:00

Associate Professor of Biology at Temple University in Philadelphia, Pennsylvania, Erik Cordes, has been studying the lake at the bottom of the Gulf of Mexico – nearly 650 feet from the surface. He has determined that the water in this lake within the sea is about five times as salty as the sea water around it and contains both toxic methane and hydrogen sulfide. In 2014, Cordes piloted an HOV – Human Occupied Vehicle – which he called Alvin to an underwater river in the Gulf of Mexico that was so dense that he could actually land the HOV on top of it. He agrees that it is very disorienting to land on a pond and realize that you are actually deep in the ocean. The briny pool he has been studying is referred to as the Hot Tub of Despair.

It is a crater filled with brine with an outer wall that rises 12 feet above the ocean floor and is surrounded by bright red and white mineral deposits. Some of the deposits are crystalline and have various shapes and sizes. Mussels thrive due to the abundant number of bacteria living on their gills that use the methane and hydrogen sulfide gas seeping from the ocean floor. Fields of tube worms also live there. The crater's stability also depends on the muscles living on the edge help keep its outer walls from falling apart.

7:00

It is definitely a symbiotic relationship between the bacteria, the muscles, and the crater. Each depends on the work of the other for survival. While exploring the crater, scientists found many dead sea creatures that did not have a way to survive the surroundings. The brine contains almost no oxygen and plenty of toxic chemicals that almost instantly kill fish and other sea life. Interestingly enough, the salty brine preserves the dead animals. Creature remains found there could have been there for decades!

When measuring the salinity of this particular area, a sensor was lowered into the pool. From the surface of the brine to a depth of about 10 feet, the temperature was 46 degrees Fahrenheit – six degrees warmer than the temperature of the surrounding waters of the Gulf of Mexico which were approximately 40 degrees Fahrenheit. As the sensor went deeper into the pool, the temperature rose to 66 degrees. The probe fell more than 62 feet into the brine pool, but it never found the bottom. It would seem that the source of



**8:00** the brine and deadly hydrocarbons is a crack in the Earth itself which made it nearly impossible to find the bottom.

Brine pools are not just found in the Gulf of Mexico. They have also been found in the Red Sea and near Antarctica. Maybe someday more humans will be able to see them first-hand using HOVs. But, until then, we will have to be content watching videos of scientific exploration of these lakes posted on the internet or in documentaries.

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Listening

grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

UIL LISTENING CONTEST - GRADES 5-6  
FALL/WINTER DISTRICT 2020-2021  
TEST

**"UNDERWATER LAKES"**

1. What do geoscientists study?
  - A. the salinity and temperature of the ocean water
  - B. the composition and structure of the ocean floor
  - C. the types of sea creatures that live in the ocean
  - D. all aspects of the world's oceans and seas
2. How many million years ago was the Jurassic Period?
  - A. 50 to 100
  - B. 100 to 150
  - C. 150 to 200
  - D. 200 to 250
3. What caused the great salt beds formed by the ancient Gulf of Mexico to break apart?
  - A. shifting of tectonic plates
  - B. weight of the Ozark Mountains
  - C. drying out of the Gulf
  - D. huge amounts of rainfall
4. Which of the following is NOT a characteristic of brine pools?
  - A. saltiness
  - B. greater density
  - C. distinct shoreline
  - D. glasslike surface
5. How far do the outer walls of the Hot Tub of Despair rise above the ocean floor?
  - A. 5 feet
  - B. 7 feet
  - C. 10 feet
  - D. 12 feet
6. What is the function of the HOV?
  - A. measure the temperature of water in brine pool
  - B. allow humans to travel underwater for scientific observation
  - C. protect the sea creatures from methane gas
  - D. provide a symbiotic relationship between humans and the ocean floor
7. What temperature in Fahrenheit is the brine pool, The Hot Tub of Despair, at a depth of 10 feet?
  - A. 45 degrees
  - B. 46 degrees
  - C. 47 degrees
  - D. 48 degrees
8. Which of the following creatures cannot live in or on a brine pool?
  - A. anemone
  - B. tube worms
  - C. shrimp
  - D. bacteria

9. What is the source of the deadly hydrocarbons in the Hot Tub of Despair?
- A. poisonous gasses that are released as the salt dissolves
  - B. decay of the many sea creatures that die in the brine
  - C. a very deep crack in the earth
  - D. a chemical reaction that occurs where the two densities of water meet
10. Where else have underwater brine pools been discovered?
- A. the Red Sea and the River Jordan
  - B. near Antarctica and the Red Sea
  - C. the Pacific Ocean and near Antarctica
  - D. Iceland and the River Jordan
11. What happens to the bacteria on the gills of muscles that are found near the brine pool?
- A. they cannot process oxygen from the water and die
  - B. they combine salt and sunlight to create nutrients
  - C. the methane gas near the pool is converted to energy
  - D. the combination of methane and salt preserves the bacteria creating a dense layer
12. What do scientists call the visible boundary between the sea and a brine pool?
- A. the gulf
  - B. the paradox
  - C. the crater
  - D. the halocline
13. How many miles deep is the salt bed under the Gulf of Mexico?
- A. 5
  - B. 6
  - C. 7
  - D. 8
14. What caused the salt beds under the Gulf of Mexico?
- A. it was cut off from the oceans and the water evaporated over time
  - B. the tectonic plates moved causing the water to rush out leaving shallow salty water
  - C. global warming caused the waters to become too warm to sustain life
  - D. an earthquake created a rift in the ocean floor sucking water in to underground rivers
15. Why are underwater brine pools called lakes?
- A. they have a different density and a distinct surface and shoreline
  - B. they have waves caused by the movement of water
  - C. they grow different kinds of plants and sea creatures than regular seawater
  - D. the difference in salinity causes them to be a different color
16. In what year did Erik Cordes visit the Hot Tub of Despair?
- A. 2014
  - B. 2015
  - C. 2016
  - D. 2017

17. What is salt tectonics?
- A. the shifting of the sea floor causing salt beds to form
  - B. the movement of the walls of a brine pool causing a change in density
  - C. when a dome of salt dissolves creating hyper salinity in the surrounding water
  - D. when a layer of salt collapses and shifts creating a depressed layer on the ocean floor
18. What is a symbiotic relationship?
- A. one creature gives another creature his own life
  - B. two creatures depend upon each other for life
  - C. one creature does all the work while the other benefits
  - D. both creatures use the same type of nutrients to stay alive, so they share their resources

### **True/False Questions**

19. Erik Cordes called his underwater vessel Alvin and piloted it to an underwater river in the Gulf of Mexico that was so dense that he could actually land on top of it.
20. Methane is a gas, which on land, is odorless, colorless, and found mainly in very swampy, marshy areas or in very damp coal mines.
21. Some ocean mussels have adaptations that allow them to get their nutrients from bacteria as the bacteria convert the sunlight in the salty water into energy.
22. Erik Cordes determined that the water in the Hot Tub of Despair is about five times as salty as the sea water around it and contains both toxic methane and hydrogen sulfide.
23. The walls of the Hot Tub of Despair regularly collapse because of the muscles living on its outer walls.
24. As you go deeper into the Hot Tub of Despair, the water gets cooler.
25. There are no known methane-producing organisms near the ocean's surface.

UIL LISTENING CONTEST - GRADES 5-6  
FALL/WINTER DISTRICT 2020-2021  
**ANSWER KEY**

**"UNDERWATER LAKES"**

- |       |           |
|-------|-----------|
| 1. B  | 14. A     |
| 2. C  | 15. A     |
| 3. A  | 16. A     |
| 4. D  | 17. D     |
| 5. D  | 18. B     |
| 6. B  | 19. True  |
| 7. B  | 20. True  |
| 8. A  | 21. False |
| 9. C  | 22. True  |
| 10. B | 23. False |
| 11. C | 24. False |
| 12. D | 25. True  |
| 13. A |           |

UIL LISTENING CONTEST - GRADES 5/6  
INVITATIONAL MEET 2020-2021  
**ANSWER KEY**

"The History of Zippers"

**1. A**

**2. B**

**3. C**

**4. A**

**5. B**

**6. D**

**7. B**

**8. B**

**9. D**

**10. A**

**11. B**

**12. C**

**13. C**

**14. A**

**15. B**

**16. B**

**17. A**

**18. D**

**19. False**

**20. True**

**21. True**

**22. True**

**23. False**

**24. False**

**25. False**

**UIL LISTENING CONTEST - GRADES 5 &6  
SPRING DISTRICT 2020-2021**

**Contest Script- "RUTH ELDER – THE SOUTHERN AMELIA  
EARHART"**

Have you ever heard of Amelia Earhart? Amelia Earhart was an American aviator who set many flying records. She became the first woman to fly alone across the Atlantic Ocean. She was also the first person – including both men and women – to fly alone from Hawaii to the continental United States. During an attempt to fly around the Earth following the equator in 1937, her plane disappeared somewhere over the Pacific Ocean. The wreckage from her plane was never found, and she was declared lost at sea. Even today, people try to find out what happened to her. What happened to her may remain one of the great unsolved mysteries of the world. Her contribution to women in aviation was extremely important.

1:00 She believed that women were just as capable as men when it came to learning to fly, and she wanted other women to see her success and not be afraid to try themselves. Why is this important? Let's look at the facts. In 1911, Harriet Quimby went against tradition and fought hard to become the first woman to earn a pilot certificate. That was over 100 years ago. It would seem that there would be many women pilots now. In fact, only 3 percent of airline pilots are women. Perhaps if more people knew about the successful women pilots of the past, they would want to give it a shot. What does this have to do with Ruth Elder? Ruth Elder was a famous pilot before Amelia Earhart took her historic flight. She also believed that women could be just as successful as men in the cockpit. Although she became famous before Amelia, she is now known as the Southern Amelia Earhart.

Ruth Elder was born on September 12, 1904, in Anniston, Alabama. She was one of eight children. Not much has been recorded about her childhood. We do know that when she was young, she worked briefly at a department store in Birmingham, Alabama. Shortly after that, she moved to Lakeland, Florida, where she studied for one year in a business school. This led to a job as a secretary and then as a dental assistant. Up until this point, she was just an ordinary girl in a world of everyday people. But then, in 1927, something unusual happened.



**2:00** 1927 is often remembered as the year that Charles Lindbergh became the first person to fly across the Atlantic Ocean on a solo flight. Before he became a pilot, however, he was raised on a farm in Minnesota. His father was a lawyer and a congressman. He studied mechanical engineering at the University of Wisconsin before he left school and became a pilot. He made his first solo flight in 1923 and soon became a barnstormer, or daredevil pilot, who performed at fairs and other events. In 1924, he enlisted in the U.S. Army and trained as an Army Air Service Reserve pilot. In the mid-1920s, a hotel owner named Raymond Orteig offered a prize of \$25,000 to the first pilot who could fly from New York to Paris without stopping.

Charles Lindbergh wanted to win this challenge, so he found some St. Louis businessmen to sponsor him. Several people tried before him and failed, but he was determined to win. He took off from Roosevelt Field in Long Island, New York, on May 20, 1927. Flying his plane, the *Spirit of St. Louis*, he crossed the Atlantic Ocean, landing at Le Bourget Field near Paris after 33.5 hours in the air. He was welcomed by more than 100,000 people who came to see the historic feat. This launched him into immediate stardom. Of course, this meant that many other people would try to make a transatlantic flight themselves. Before Lindbergh, most long-distance flights that travelled over water were military. Now, anyone with a plane might attempt it. One of those people was a woman. You guessed it – Ruth Elder.

**3:00**

After Lindbergh became famous for his flight, Ruth and her husband became interested in flying. She took lessons and found that she enjoyed it. Because she was a pretty girl with curly brown hair and a winning smile, some of her husband's business friends thought it would be a good idea to record a film of her flying a plane and try to sell the idea to Hollywood. Ruth agreed because she said flying was much better than working at a dentist office and making dinner for her husband. Ruth soon became known as the "Miss America" of the aviation world. She believed that if a man could make that flight, then she could, too. She also knew that if she was successful, it would launch her career in Hollywood as a movie star. She made up her mind that she would be the first "Lady Lindy", meaning that she would be the first woman to fly across the Atlantic. Some people called her flight simply a stunt to bring her publicity. They were concerned that it was too dangerous for such an inexperienced pilot.

**4:00**

During this time, businessmen were looking for a girl to make the flight. It didn't take long before they chose Ruth. Her financial backers, investors from Wheeling, West Virginia were eager to cash in on the fame should she be successful. They put up \$35,000 for her plane, a yellow Stinson SM-1 Detroiter. She named her plane "American Girl." The pilot that had taught her how to fly was instructor George Haldeman. He agreed to become her co-pilot on her trip across the Atlantic. Across America and the world, people were anxious to see if she would be successful.

**5:00** On October 11, 1927, the two set off from Roosevelt Field on Long Island in their yellow Stinson SM-1 Detroiter, "The American Girl." The day of the flight, a crew loaded her plane with gas, an emergency radio, and a basket of food containing sandwiches, chocolate bars, dill pickles, soup, and two quarts of coffee. They also loaded rubber suits which were designed to keep them afloat in case they were forced to land in the water. Ruth believed everything was ready to go, but on that day, the weather wasn't clear enough to fly. Against the advice of her crew, she and George began the journey.

Although she had said she wanted her flight to be as similar to Lindbergh's flight as possible, he had planned his flight using the shortest distance route to fly from New York to Paris. Ruth and Haldeman decided to follow the shipping lanes for safety and in hopes that the weather would be better there. This added 500 miles to their trip. As they flew, the Weather Bureau noted that a severe storm would be directly in their path. Fifteen hours into their flight and less than halfway there, they began to have trouble. They plane's engine struggled as ice began to form on the wings. They developed an oil leak, and soon the oil pressure dropped.

**6:00** On the morning of October 13<sup>th</sup>, they were expected to be in Paris by 7:00 AM. No ship had reported seeing them beyond 400 miles from New York. Time passed with no updates on their whereabouts. Finally, at 4:35 PM, a radiogram arrived stating that Elder and Haldeman were safe after being rescued at sea. Eight hours away from Europe in the middle of the ocean, they had been rescued by the SS Barendrecht, a Dutch oil tanker. The "American Girl" had flown over the tanker and dropped a message to the deck asking how far it was to the nearest land. The crew quickly painted the answer on the deck, notifying Elder that it was at least 360

miles. The decreasing oil pressure made it impossible to fly that far. George Haldeman flew the plane into the water near the ship, and he and Ruth were pulled aboard. The “American Girl” burst into flames and then sank into the water.

7:00

By the time the Ruth Elder reached Europe, she had become an even bigger celebrity. Although she did not reach her goal, her 2,623 mile flight was the longest ever accomplished by a woman. When she returned to the United States, President Calvin Coolidge greeted her in Washington, D.C. People in Anniston, Alabama, held a “Ruth Elder Day” complete with a parade and white cakes with red icing letters spelling the word Ruth. In New York, a ticker tape parade was held to honor her achievement. Although she didn’t reach Paris, she was the first woman to attempt to fly across the Atlantic and had set a new over water record. Her name was added to the list of aviation pioneers.

In 1930, Mildred Benson wrote a book series based on the life of Ruth Elder. This was the same author who wrote the original Nancy Drew book series. The main character of this series, Ruth Darrow, looks similar to Ruth Elder and goes on many adventures. Ruth lived a long life, but did not have any other accomplishments to bring her more fame. In 1977, she died in her sleep in San Francisco. She left instructions to her husband stating that she wished to be cremated and have her ashes scattered from an airplane into the sea.

In 2013, a children’s book was published about her flying life. Written by Julie Cummins and Illustrated by Marlene R. Laugesson, the book was entitled *Flying Solo: How Ruth Elder Soared into America’s Heart*.

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



**Listening**  
grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

UIL LISTENING CONTEST - GRADES 5-6  
SPRING DISTRICT 2020-2021  
TEST

**"RUTH ELDER – THE SOUTHERN AMELIA EARHART"**

1. Who took off from Roosevelt Field in Long Island, New York, on May 20, 1927?
  - A. Amelia Earhart
  - B. Ruth Elder
  - C. Charles Lindberg
  - D. Raymond Orteig
  
2. What did Harriet Quimby do that made her famous?
  - A. flew across the Atlantic Ocean in a solo flight
  - B. first pilot to circle the globe
  - C. flew with a co-pilot from Hawaii to the mainland
  - D. first licensed woman pilot
  
3. What is a barnstormer?
  - A. a pilot who parachutes into a hay bale
  - B. a pilot who flies low and drops pesticide on farms
  - C. a pilot who does dangerous stunts
  - D. a pilot who attempts to fly long distances alone
  
4. What was the name of Charles Lindberg's plane?
  - A. The Spirit of Saint Louis
  - B. American Girl
  - C. Lindy's Lady
  - D. The New York Flier
  
5. Why did Ruth Elder choose George Haldeman as her co-pilot?
  - A. He had made the flight across the Atlantic before.
  - B. He was the instructor who taught her to fly.
  - C. He had worked with Amelia Earhart and trusted women pilots.
  - D. He wasn't afraid of taking a dangerous journey.
  
6. What day was Ruth Elder supposed to arrive in Paris after her famous flight?
  - A. May 22
  - B. October 13
  - C. November 11
  - D. September 21
  
7. Which of the following items was not included in the basket Ruth Elder took on her flight?
  - A. chips
  - B. sandwiches
  - C. chocolate bars
  - D. dill pickles

8. About what percent of pilots are women today?
- A. 1 percent
  - B. 3 percent
  - C. 5 percent
  - D. 7 percent
9. How did following the shipping lanes affect Elder's trip compared to Lindberg's?
- A. the shipping lanes allowed for easier tracking of the plane
  - B. steering clear of the shipping lanes made for a longer trip
  - C. receiving signals was more likely because of the ship's radio systems
  - D. following the shipping lanes increased the distance she would fly
10. In what year did Amelia Earhart attempt to fly around the world following the equator?
- A. 1927
  - B. 1937
  - C. 1933
  - D. 1943
11. Which of the following jobs did Ruth Elder hold before becoming a pilot?
- A. dental assistant
  - B. teacher
  - C. nurse
  - D. flight attendant
12. Where did Charles Lindberg study mechanical engineering?
- A. University of Alabama
  - B. University of Wisconsin
  - C. University of Florida
  - D. University of Washington
13. Who put up \$35,000 for Ruth Elder's plane?
- A. Charles Lindberg's trust fund lawyers
  - B. investors from St. Louis, Missouri and the Spirit of St. Louis
  - C. investors from Wheeling, West Virginia
  - D. George Haldeman's flight school
14. Who rescued Ruth Elder when her plane crashed into the sea?
- A. a Dutch oil tanker
  - B. a French cruiser
  - C. the English coast guard
  - D. an American freighter
15. How was Ruth Elder honored by Mildred Benson in 1930?
- A. She organized a ticker tape parade in New York.
  - B. She dedicated a plaque on her hometown high school.
  - C. She inducted Ruth into the Pioneer Aviator Hall of Fame.
  - D. She wrote a book series based on her life.
16. What color was Ruth Elder's plane?
- A. blue
  - B. gray
  - C. yellow
  - D. white

17. How many miles did Ruth Elder fly in her attempt to fly from New York to Paris?
- A. more than 3000 miles
  - B. 650 miles less than Lindberg
  - C. just over 2600 miles
  - D. between 1500 and 2000 miles
18. Before becoming a pilot, Charles Lindberg was raised on a farm in
- A. Wisconsin
  - B. Minnesota
  - C. Missouri
  - D. New Jersey

**True/False**

19. Ruth Elder won the Miss America contest before learning to be a pilot and was called the Miss America of the aviation world.
20. Before her death in 1977, Ruth left instructions to her husband stating that she wished to be cremated and have her ashes scattered from an airplane into the sea.
21. Although she didn't reach Paris, she was the first woman to attempt to fly across the Atlantic and had set a new over water record
22. Ruth Elder was born on September 12, 1914, in Anniston, Oklahoma as the youngest of nine children.
23. In the mid-1920s, a hotel owner named Raymond Orteig offered a prize of \$25,000 to the first woman pilot who could fly from New York to Paris without stopping.
24. Fifteen hours into her famous flight and less than halfway there, the plane's engine struggled as ice began to form on the wings.
25. In 2013, a children's book entitled *Flying Solo: How Ruth Elder Soared into America's Heart* written by Julie Cummins was published.

UIL LISTENING CONTEST - GRADES 5-6  
SPRING DISTRICT 2020-2021  
**ANSWER KEY**

**"RUTH ELDER – THE SOUTHERN AMELIA EARHART"**

- |       |           |
|-------|-----------|
| 1. C  | 14. A     |
| 2. D  | 15. D     |
| 3. C  | 16. C     |
| 4. A  | 17. C     |
| 5. B  | 18. B     |
| 6. B  | 19. False |
| 7. A  | 20. True  |
| 8. B  | 21. True  |
| 9. D  | 22. False |
| 10. B | 23. False |
| 11. A | 24. True  |
| 12. B | 25. True  |
| 13. C |           |



**FOR GRADER USE ONLY**

Score Test Below:

\_\_\_\_\_ Initials \_\_\_\_\_

\_\_\_\_\_ Initials \_\_\_\_\_

Papers contending to place:

\_\_\_\_\_ Initials \_\_\_\_\_



**University Interscholastic League  
A+ Maps/Graphs/Charts Contest • Answer Sheet**

*Write your contestant number in the upper right corner, and circle your grade below.*

**Circle Grade Level:                    5        6        7        8**

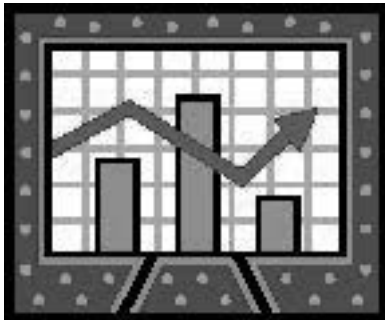
- |       |   |   |   |       |   |       |   |       |   |   |   |
|-------|---|---|---|-------|---|-------|---|-------|---|---|---|
| 1. A  | B | C | D | 26. T | F | 51. A | B | C     | D |   |   |
| 2. A  | B | C | D | 27. T | F | 52. A | B | C     | D |   |   |
| 3. A  | B | C | D | 28. T | F | 53. A | B | C     | D |   |   |
| 4. A  | B | C | D | 29. T | F | 54. A | B | C     | D |   |   |
| 5. A  | B | C | D | 30. T | F | 55. A | B | C     | D |   |   |
| 6. A  | B | C | D | 31. A | B | C     | D | 56. T | F |   |   |
| 7. A  | B | C | D | 32. A | B | C     | D | 57. T | F |   |   |
| 8. A  | B | C | D | 33. A | B | C     | D | 58. T | F |   |   |
| 9. A  | B | C | D | 34. A | B | C     | D | 59. T | F |   |   |
| 10. A | B | C | D | 35. A | B | C     | D | 60. T | F |   |   |
| 11. A | B | C | D | 36. A | B | C     | D | 61. A | B | C | D |
| 12. A | B | C | D | 37. A | B | C     | D | 62. A | B | C | D |
| 13. A | B | C | D | 38. A | B | C     | D | 63. A | B | C | D |
| 14. A | B | C | D | 39. A | B | C     | D | 64. A | B | C | D |
| 15. A | B | C | D | 40. A | B | C     | D | 65. A | B | C | D |
| 16. A | B | C | D | 41. T | F | 66. A | B | C     | D |   |   |
| 17. A | B | C | D | 42. T | F | 67. A | B | C     | D |   |   |
| 18. A | B | C | D | 43. T | F | 68. A | B | C     | D |   |   |
| 19. A | B | C | D | 44. T | F | 69. A | B | C     | D |   |   |
| 20. A | B | C | D | 45. T | F | 70. A | B | C     | D |   |   |
| 21. A | B | C | D | 46. A | B | C     | D | 71. T | F |   |   |
| 22. A | B | C | D | 47. A | B | C     | D | 72. T | F |   |   |
| 23. A | B | C | D | 48. A | B | C     | D | 73. T | F |   |   |
| 24. A | B | C | D | 49. A | B | C     | D | 74. T | F |   |   |
| 25. A | B | C | D | 50. A | B | C     | D | 75. T | F |   |   |

**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Maps, Graphs & Charts

grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

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## Europe Political Relief Map

- What is the capital city of Ukraine?
  - Donetsk
  - Kharkiv
  - Kiev
  - Lviv
- Which of the following countries is south of Slovakia?
  - Estonia
  - Poland
  - Moldova
  - Serbia
- Which of the following countries does not occupy land on two continents?
  - Kazakhstan
  - Russia
  - Spain
  - Turkey
- What city can be found on the shores of the Gulf of Finland at 59.9311°N?
  - St. Petersburg
  - Helsinki
  - Oslo
  - Riga
- How many countries are part of Iceland's southern border?
  - 1
  - 2
  - 3
  - None of the above
- What body of water separates Ukraine from Asia?
  - Sea of Azov
  - The Atlantic Ocean
  - Caspian Sea
  - Black Sea
- Which of the following Russian cities has the smallest population?
  - Volgograd
  - Bryansk
  - Kazan
  - Ufa
- How far is it in miles from Paris, France to Rome Italy?
  - About 500 miles
  - About 600 miles
  - About 700 miles
  - About 800 miles
- The Danube River flows through which of the following countries?
  - Germany
  - Austria
  - Romania
  - All of the above
- What does a blue dotted line connected to a black dotted line represent?
  - Dry or Seasonal Lake and River
  - Dams
  - Canals
  - Waterfalls
- Where are The Alps located?
  - Northern border of Switzerland
  - Western border of France
  - Northern border of Italy
  - Central Germany
- One centimeter is equal to how many kilometers on the map?
  - 100
  - 174
  - 275
  - 400
- How many small countries exist within the Italian mainland?
  - 1
  - 2
  - 3
  - None
- What European capital is the furthest west?
  - Vilnius, Lithuania
  - Tirana, Albania
  - Bern, Switzerland
  - Porto, Portugal
- The Onega River flows in to what sea?
  - Black Sea
  - White Sea
  - Celtic Sea
  - None of the above

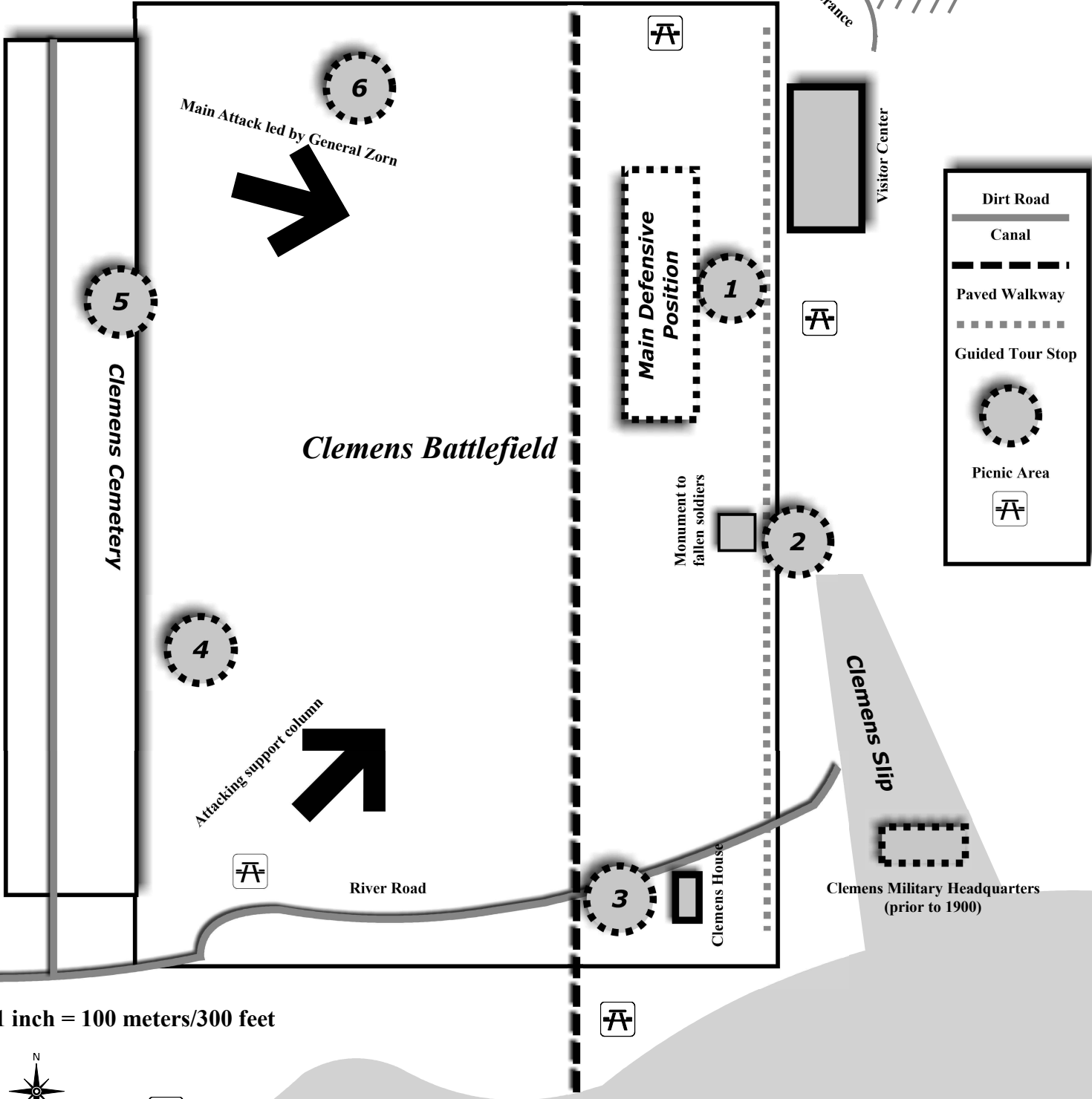
# Clemens Battlefield Historical Site



Old Town  
10 Miles



Entrance



	Dirt Road
	Canal
	Paved Walkway
	Guided Tour Stop
	Picnic Area

1 inch = 100 meters/300 feet



Green River

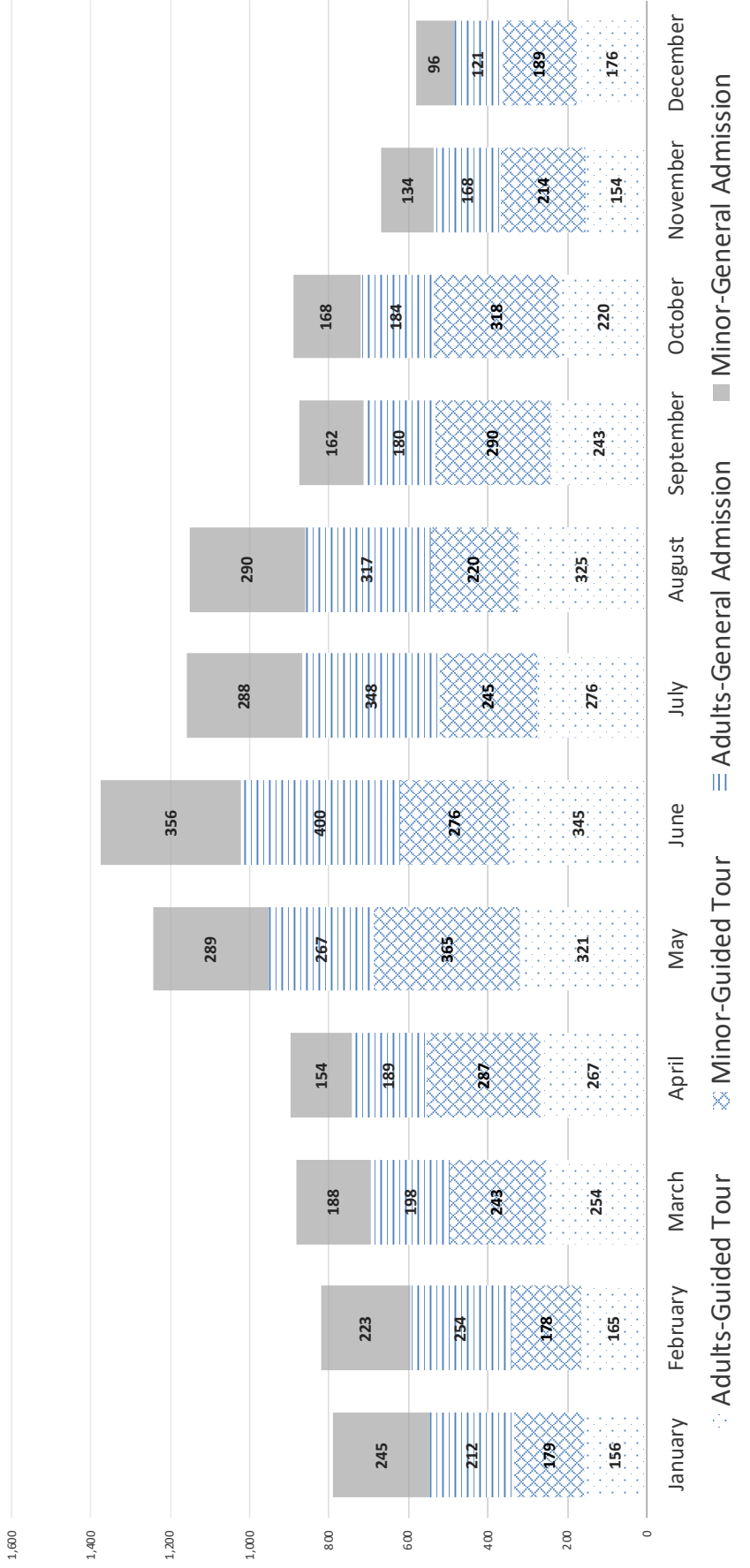
Defensive Battery Site on South Bank of River



## Clemens Battlefield Historical Site

16. How many stops are on the guided tour?
- 0
  - 2
  - 4
  - 6
17. What does the grey dotted line represent?
- Dirt road
  - Canal
  - Paved walkway
  - Highway
18. How many meters does 3 inches on the map represent?
- 300
  - 900
  - 100
  - 500
19. How many picnic areas are shown on the map?
- 2
  - 3
  - 4
  - 5
20. The support column attacked from what direction?
- Northwest
  - Southwest
  - Northeast
  - Southeast
21. The parking lot is located closest to which of the following guided tour stops?
- The Monument to Fallen Soldiers
  - The Clemens House
  - The Visitor Center
  - The main defensive position
22. What stop on the guided tour is the furthest west.
- 1
  - 3
  - 5
  - 7
23. How far is it to the closest indicated town?
- 10 miles
  - 15 miles
  - 20 miles
  - Not indicated on the map
24. Where is the defensive battery site located?
- On the north side of the cemetery
  - On the east side of the battlefield
  - On the northern riverbank
  - On the southern riverbank
25. How many paved roads run through the battlefield?
- 0
  - 1
  - 2
  - 3
- TRUE/FALSE**
26. The attack came from two directions.
27. Clemens House is directly north of a dirt road.
28. The cemetery is on the eastern side of the site.
29. The main attack came from the general direction of Old Town.
30. A dirt road runs through the cemetery.

## HISTORICAL SITE VISITORS BY ADMISSIONTYPE



## Historical Site Visitors by Admission Type

31. What year is represented on the graph?
- 2019
  - 2018
  - 2017
  - Not indicated
32. How many categories of visitors are represented for each month?
- 1
  - 2
  - 3
  - 4
33. What does the darkest section of each column represent?
- January
  - February
  - Minor general admission
  - Adults guided tour
34. What month had the highest total number of visitors?
- August
  - September
  - October
  - November
35. In February, what type of customer had the lowest attendance?
- Minor guided tour
  - Adults guided tour
  - Adults general admission
  - Minor general admission
36. Which month saw the highest decline in overall numbers compared to the previous month?
- February
  - June
  - July
  - December
37. Which month saw the highest amount of adult general admission visitors?
- June
  - March
  - October
  - August
38. How many years of data are displayed on the graph?
- 0
  - 1
  - 2
  - 30
39. How many times did an individual category rise above 500?
- 0
  - 1
  - 2
  - 3
40. Which customer category had the lowest number of attendees for the whole year?
- Minor guided tour
  - Adults guided tour
  - Adults general admission
  - Minor general admission
- TRUE/FALSE**
41. The summer months tend to have the highest number of visitors.
42. December had the lowest number of visitors in all categories.
43. After June, the number of visitors declined every month.
44. The number of minor general admission visitors never fell below 200 in a single month.
45. In January, the highest number of visitors were general admission minors.



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## Australia and Its Neighbors Land Cover and Elevation Maps

46. Australia is mainly covered by what type of terrain?

- a. Cropland
- b. Grassland
- c. Semi-desert and desert
- d. Tropical rain forest

47. Port Vila is the capital of what country?

- a. Australia
- b. New Zealand
- c. Indonesia
- d. Vanuatu

48. What do the white dots on the two maps represent?

- a. Continental boundary
- b. International boundary
- c. Disputed boundary
- d. International Date Line

49. What is the elevation, in meters, on the island of Dolak?

- a. Between 600 to 1,5000
- b. Between 300 to 600
- c. Between 0 to 150
- d. Below sea level

50. The Great Dividing Range runs mainly across what part of Australia?

- a. South
- b. North
- c. West
- d. East

51. What is the capital of Australia?

- a. Perth
- b. Sydney
- c. Canberra
- d. Adelaide

52. What city can be found at 12.46° S, 130.84° E?

- a. Darwin, Australia
- b. Brisbane, Australia
- c. Wellington, New Zealand
- d. Perth, Australia

53. What is the highest peak in Australia?

- a. Mt. Cook
- b. Mt. Tambora
- c. Mt. Ossa
- d. Mt. Kosciuszko

54. What body of water lies between Australia and Tasmania?

- a. Indian Ocean
- b. Bass Strait
- c. Pacific Ocean
- d. Torres Strait

### TRUE/FALSE

55. The highest elevation in New Guinea is between 5,000 to 10,000 feet.

56. New Caledonia is just located east of the Tropic of Capricorn.

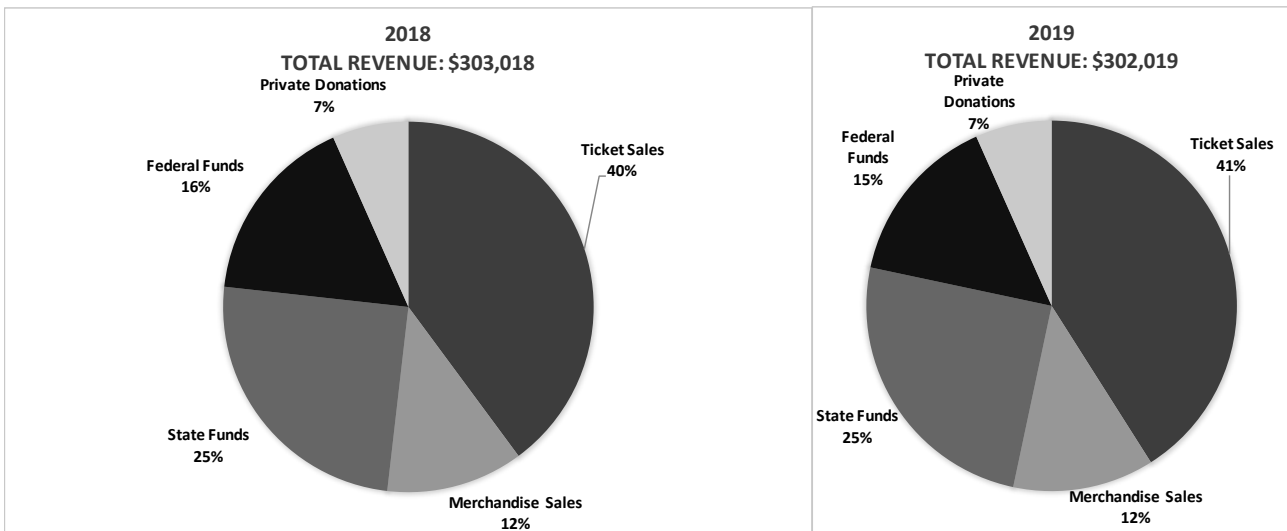
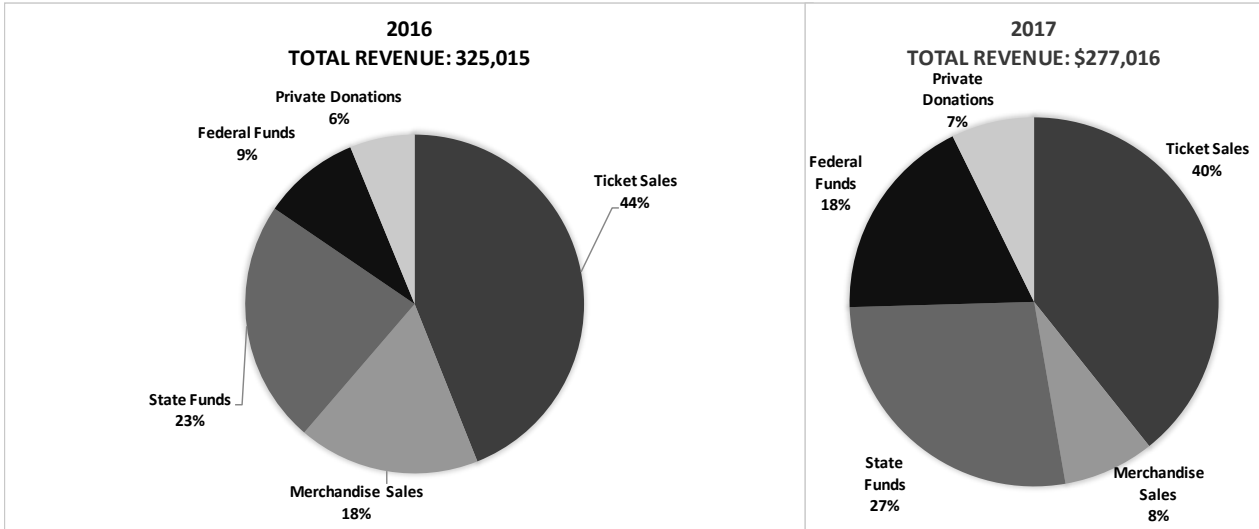
57. Lake Disappointment is an example of a lake that can be dry in certain seasons.

58. One inch equals more miles on the cross section than on the main elevation map.

59. Grassland is the main land cover type in Borneo.

60. Most of the large Australian cities are located on the coast.

## Historical Site Revenue



## Historical Site Revenue

61. What period of time is represented by each pie chart?
- One week
  - One month
  - One year
  - Four years
62. What is the greatest source of revenue in all years combined?
- Ticket sales
  - Merchandise sales
  - State funds
  - Private donations
63. In what year was the most revenue generated?
- 2016
  - 2017
  - 2018
  - Data not available
64. In what year did state funding account for the lowest percentage of revenue?
- 2016
  - 2017
  - 2018
  - Data not available
65. How many different sources of revenue are shown in the charts?
- 4
  - 5
  - 20
  - 25
66. What year did Federal funding account for the highest percentage of funding?
- 2016
  - 2017
  - 2018
  - Data not available
67. In how many years did state funds account for more than 25% of that year's revenue?
- 1
  - 2
  - 3
  - 4
68. In how many years did merchandise sales account for more revenue than state funding?
- 0
  - 2
  - 3
  - 4
69. What does the lightest part of the pie chart represent?
- Ticket sales
  - Merchandise sales
  - State funds
  - Private donations
70. In how many years did ticket sales account for more than \$100,000 in revenue?
- 2
  - 3
  - 4
  - Data not available

### TRUE/FALSE

71. State funding was higher than federal funding every year.
72. Merchandise sales hit their peak in 2016.
73. Comparing the category of ticket sales across the four charts, ticket sales generated the least amount of money in 2017.
74. 2017 is the only year that saw a decrease in revenue from the previous year.
75. The category with the most amount of variation across the different charts is private funding.



**University Interscholastic League**  
**A+ Maps/Graphs/Charts Contest • 2020-2021**  
**5/6 Invitational District**  
**Answer Key**

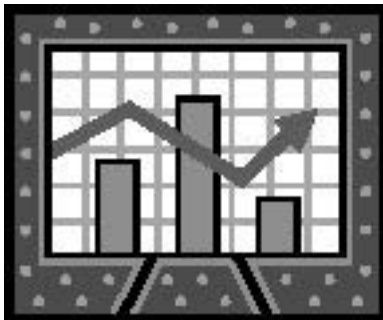
1. C	26. T	51. C
2. D	27. F	52. A
3. C	28. F	53. D
4. A	29. T	54. B
5. D	30. T	55. F
6. D	31. D	56. F
7. B	32. D	57. T
8. D	33. C	58. F
9. D	34. A	59. F
10. A	35. B	60. T
11. C	36. C	61. C
12. B	37. A	62. A
13. B	38. B	63. A
14. C	39. A	64. A
15. B	40. D	65. B
16. D	41. T	66. B
17. C	42. F	67. A
18. A	43. F	68. A
19. D	44. F	69. D
20. B	45. T	70. C
21. D	46. C	71. T
22. C	47. D	72. T
23. A	48. A	73. T
24. D	49. C	74. F
25. A	50. D	75. F

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Maps, Graphs & Charts

grades 5 & 6

**DO NOT OPEN TEST  
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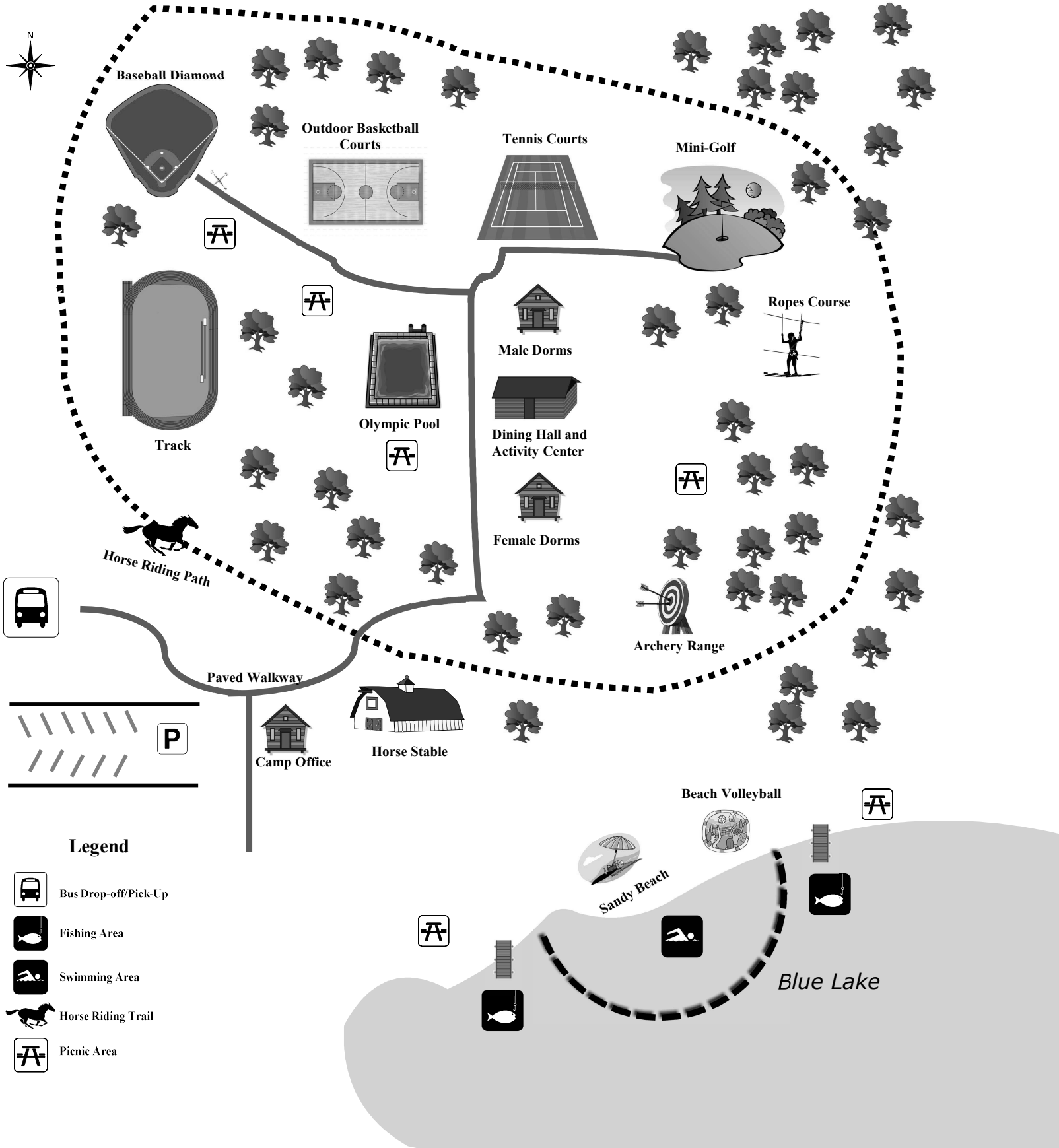
## Africa Political Relief Map

1. Which of the following capitals is on the Atlantic coast?
  - a. Mogadishu
  - b. Lobito
  - c. Maputo
  - d. Luanda
2. Which Nigerian city has the smallest population?
  - a. Lagos
  - b. Port Harcourt
  - c. Kano
  - d. Ibadan
3. The Chari River flows into what lake?
  - a. Lake Chad
  - b. Lake Victoria
  - c. Lake Volta
  - d. Lake Nyasa
4. The largest font on Political Relief maps are reserved for what feature?
  - a. Countries
  - b. Cities
  - c. Continents
  - d. Land features
5. What city of over 1,000,000 can be found at 31°N?
  - a. Douala, Cameroon
  - b. Alexandria, Egypt
  - c. Malakal, South Sudan
  - d. Omdurman, Sudan
6. Which African country is not on the Tropic of Cancer?
  - a. Iran
  - b. Algeria
  - c. Namibia
  - d. Western Sahara
7. The Kalahari Desert is located in what country?
  - a. Botswana
  - b. Libya
  - c. Mali
  - d. Somalia
8. The Canary Islands are part of what country?
  - a. France
  - b. Spain
  - c. United Kingdom
  - d. South Africa
9. Madagascar is separated from the continent by what body of water?
  - a. Mozambique Channel
  - b. Red Sea
  - c. Gulf of Aden
  - d. Gulf of Guinea
10. How many kilometers is it from Pretoria, South Africa to Port Elizabeth?
  - a. About 450km
  - b. About 550km
  - c. About 700km
  - d. About 1000km
11. The second largest lake on the continent forms the border of what country?
  - a. Senegal
  - b. Botswana
  - c. Tanzania
  - d. Ethiopia
12. Aswan High Dam is located in what part of Egypt?
  - a. Northwest
  - b. Southwest
  - c. Southeast
  - d. Northeast
13. The equator runs through which of the following?
  - a. Atlas Mountains
  - b. Red Sea
  - c. Lake Victoria
  - d. Madagascar
14. The Etosha Pan is an example of what?
  - a. Mountain range
  - b. Waterfall
  - c. Dam
  - d. Dry or seasonal lake
15. Where is the country of Seychelles located?
  - a. In the Atlantic Ocean
  - b. In the Indian Ocean
  - c. In the Mediterranean Sea
  - d. None of the above



# SANCHEZ SPORTS AND ACTIVITY CAMP

*Open May through September  
Overnight and Day-camp options  
Located 10 miles north of Central City  
and 5 miles west of Capital City*



## Legend

-  Bus Drop-off/Pick-Up
-  Fishing Area
-  Swimming Area
-  Horse Riding Trail
-  Picnic Area

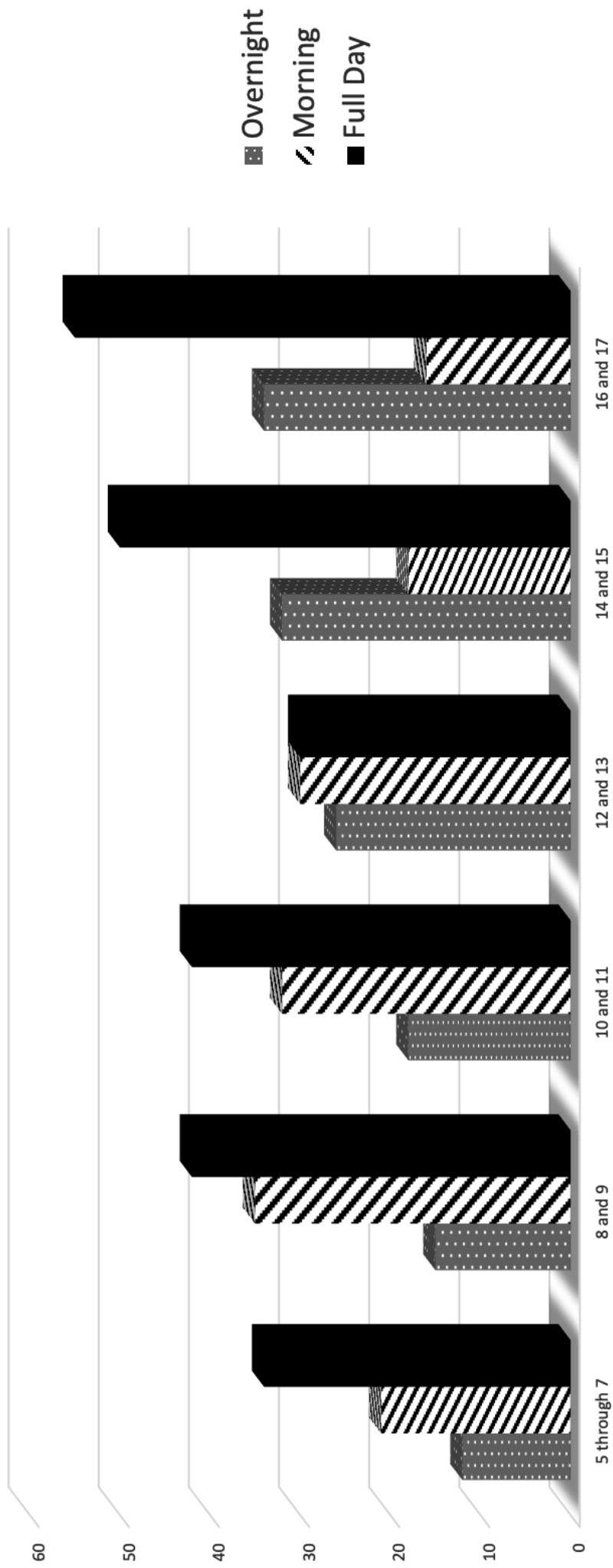
## Sanchez Sports and Activity Camp

16. How many designated fishing areas are shown on the map?
- 0
  - 2
  - 4
  - 6
17. The paved walkway does not go by or lead to which activity center?
- Tennis courts
  - Baseball diamond
  - Ropes Course
  - Mini-Golf
18. Which feature runs around most of the other activity centers?
- Horse riding path
  - Paved walkway
  - Parking lot
  - Track
19. What is the scale of the map?
- One inch equals 100 yards
  - One centimeter equals 100 meters
  - One inch equals 300 centimeters
  - Not indicated
20. The Outdoor Basketball Courts are located where?
- Just west of the Baseball Diamond
  - Just south of the Olympic Pool
  - Just west of the Tennis Courts
  - South of the Ropes Course
21. Which of the following is not located on the lake shores?
- A picnic area
  - Sandy Beach
  - Dining Hall
  - Volleyball
22. Which of the following months is the camp closed?
- March
  - June
  - August
  - September
23. How far is it to the closest indicated town?
- 5 miles
  - 10 miles
  - 20 miles
  - Not indicated on the map
24. Which activity is the furthest south?
- Track
  - Tennis
  - Bowling
  - Archery
25. Which of the following is not on the map legend?
- Picnic area
  - Horse Stable
  - Fishing Area
  - Swimming Area

### TRUE/FALSE

26. The camp is only open to overnight campers.
27. The dining hall is located between the two dorms.
28. Capital City is 10 miles west of the camp.
29. Students are dropped off and picked up by the bus in the same location.
30. There are more picnic areas than fishing areas.

## Camper Information by Age and Type Summer 2019



## Camper Information by Age and Type

31. What is represented on the Y axis?
- The year
  - The age group of campers
  - Type of camper
  - Number of campers in specified types
32. How many age groups are represented?
- 0
  - 6
  - 12
  - 18
33. What does the darkest column represent?
- Overnight campers
  - Full day campers
  - 16 and 17 year olds
  - 5 through 7 year olds
34. What category of camper always increases as the age group gets older?
- Overnight
  - Morning
  - Full day
  - None of the above
35. In the age group of 14 and 15, what category of camper type has the fewest participants?
- Overnight
  - Full day
  - Morning
  - A and B
36. Which group had the lowest number of morning campers?
- 5 through 7
  - 8 and 9
  - 10 and 11
  - 12 and 13
37. In how many categories were there more 5 through 7 year olds than 16 and 17 year olds?
- 0
  - 1
  - 2
  - 3
38. What amount of time is represented?
- One year
  - One season
  - One month
  - One week
39. How often were there less than 10 campers in an individual category?
- 0
  - 1
  - 2
  - 3
40. What age group had the highest total number of campers?
- 10 and 11
  - 12 and 13
  - 14 and 15
  - 16 and 17
- TRUE/FALSE**
41. The youngest group had the fewest overall number of campers.
42. There were more 16 and 17 year olds in all categories than the 14 and 15 group.
43. Full day campers numbers are always higher than any other category across all the age groups.
44. The 12 and 13-year-old age group had the least amount of variation in the different categories.
45. There were more than twice as many morning campers as overnight campers in the 8 and 9 age group.

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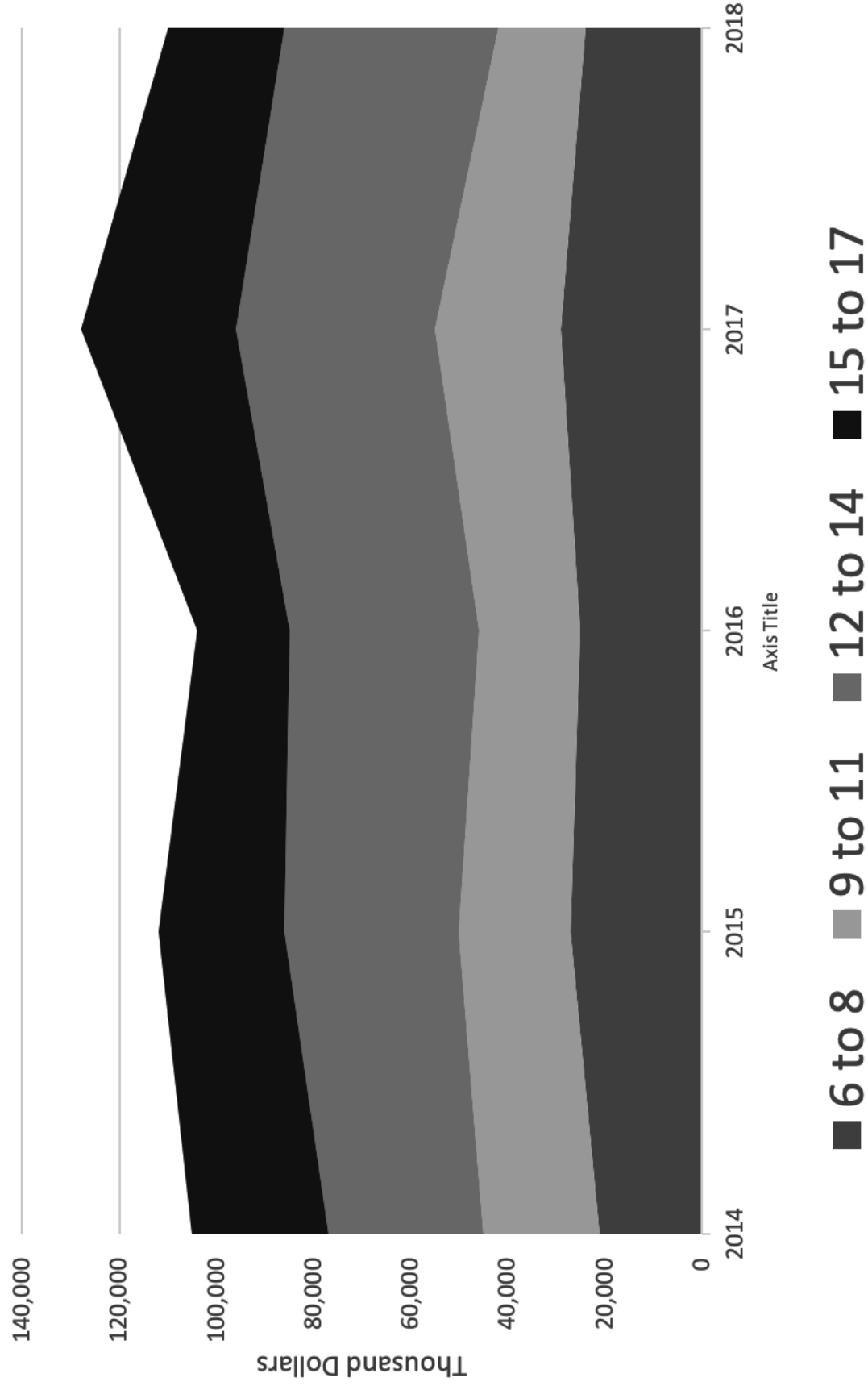
## South America

46. What is the main climate category in Argentina?
- Tropical
  - Dry
  - Mild
  - Highland
47. What country has the largest population?
- Brazil
  - Ecuador
  - Venezuela
  - Bolivia
48. Which of the following does not have a capital indicated on the map?
- Venezuela
  - French Guiana
  - Peru
  - Paraguay
49. Which country has land on Tierra del Fuego?
- Peru
  - Colombia
  - Argentina
  - Uruguay
50. The Mato Grosso Plateau is located in what country?
- Bolivia
  - Suriname
  - Brazil
  - Ecuador
51. What is the elevation of Lake Titicaca?
- Over 20,000 feet
  - Between 10,000 to 20,000 feet
  - Between 5,000 to 10,000 feet
  - Between 2,000 to 5,000 feet
52. In what country can you find Tundra?
- Bolivia
  - Suriname
  - Colombia
  - None of the above
53. What does a blue line with two small black lines crossing it indicate?
- Dam
  - Seasonal River
  - Waterfall
  - Valley
54. How many South American countries have more than one capital?
- 0
  - 1
  - 2
  - 3
55. The capital of what country sits on the Equator?
- Bolivia
  - Suriname
  - Brazil
  - Ecuador

### TRUE/FALSE

56. The Political Relief Map, the Land Cover Map and the Elevation map all have the same scale.
57. The island of San Ambrosio is controlled by Chile.
58. The highest elevations are near the west coast of the continent.
59. There are two gulfs located in eastern Argentina.
60. The Tapajos River is connected to the Amazon River.

# Sanchez Sports Camp: Revenue By Year and Age Group



## Sanchez Sports Camp Revenue Chart

61. What year was the most revenue generated?
- 2014
  - 2015
  - 2016
  - 2017
62. What is represented by the X axis?
- Revenue in dollars
  - Age groups
  - Year
  - Operating cost in dollars
63. What year did the 15 to 17-year-old age group generate the most revenue?
- 2014
  - 2015
  - 2016
  - 2017
64. How many age groups are represented?
- 1
  - 2
  - 3
  - 4
65. What year did the oldest age group generate the least amount of money?
- 2014
  - 2015
  - 2016
  - 2017
66. What does the lightest color in the chart represent?
- 2014
  - 2015
  - Age 9 to 11
  - Age 12 to 14
67. How many years are represented on the chart?
- 1
  - 3
  - 5
  - 7
68. What age group accounted for the most revenue in 2016?
- 6 to 8
  - 9 to 11
  - 12 to 14
  - 15 to 17
69. In 2014, how many age groups generated less than 20,000?
- 0
  - 1
  - 2
  - 3
70. In how many years did revenue exceed \$120,000 revenue?
- 0
  - 1
  - 2
  - 3

### TRUE/FALSE

71. 2016 saw lowest revenue generation in every age group.
72. Total revenue never fell below \$100,000.
73. 15 to 17-year-old campers generated more revenue in every year than the 9 to 11-year-old age group.
74. Overall revenue increased in every odd year compared to the previous year.
75. The colors on the chart are stacked from the lowest being the youngest to the highest being the oldest.





**University Interscholastic League**  
**A+ Maps/Graphs/Charts Contest • 2020-2021**  
**5/6 Fall District**  
**Answer Key**

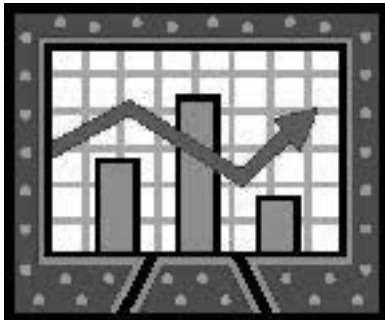
- |              |              |              |
|--------------|--------------|--------------|
| <b>1. D</b>  | <b>26. F</b> | <b>51. B</b> |
| <b>2. B</b>  | <b>27. T</b> | <b>52. A</b> |
| <b>3. A</b>  | <b>28. F</b> | <b>53. C</b> |
| <b>4. C</b>  | <b>29. T</b> | <b>54. B</b> |
| <b>5. B</b>  | <b>30. T</b> | <b>55. D</b> |
| <b>6. C</b>  | <b>31. D</b> | <b>56. F</b> |
| <b>7. A</b>  | <b>32. B</b> | <b>57. T</b> |
| <b>8. B</b>  | <b>33. B</b> | <b>58. T</b> |
| <b>9. A</b>  | <b>34. A</b> | <b>59. T</b> |
| <b>10. D</b> | <b>35. C</b> | <b>60. T</b> |
| <b>11. C</b> | <b>36. A</b> | <b>61. D</b> |
| <b>12. C</b> | <b>37. B</b> | <b>62. C</b> |
| <b>13. C</b> | <b>38. B</b> | <b>63. D</b> |
| <b>14. D</b> | <b>39. A</b> | <b>64. D</b> |
| <b>15. B</b> | <b>40. D</b> | <b>65. C</b> |
| <b>16. B</b> | <b>41. T</b> | <b>66. C</b> |
| <b>17. C</b> | <b>42. F</b> | <b>67. C</b> |
| <b>18. A</b> | <b>43. F</b> | <b>68. C</b> |
| <b>19. D</b> | <b>44. T</b> | <b>69. A</b> |
| <b>20. C</b> | <b>45. T</b> | <b>70. B</b> |
| <b>21. C</b> | <b>46. B</b> | <b>71. F</b> |
| <b>22. A</b> | <b>47. A</b> | <b>72. T</b> |
| <b>23. A</b> | <b>48. B</b> | <b>73. F</b> |
| <b>24. D</b> | <b>49. C</b> | <b>74. T</b> |
| <b>25. B</b> | <b>50. C</b> | <b>75. T</b> |

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Maps, Graphs & Charts

grades 5 & 6

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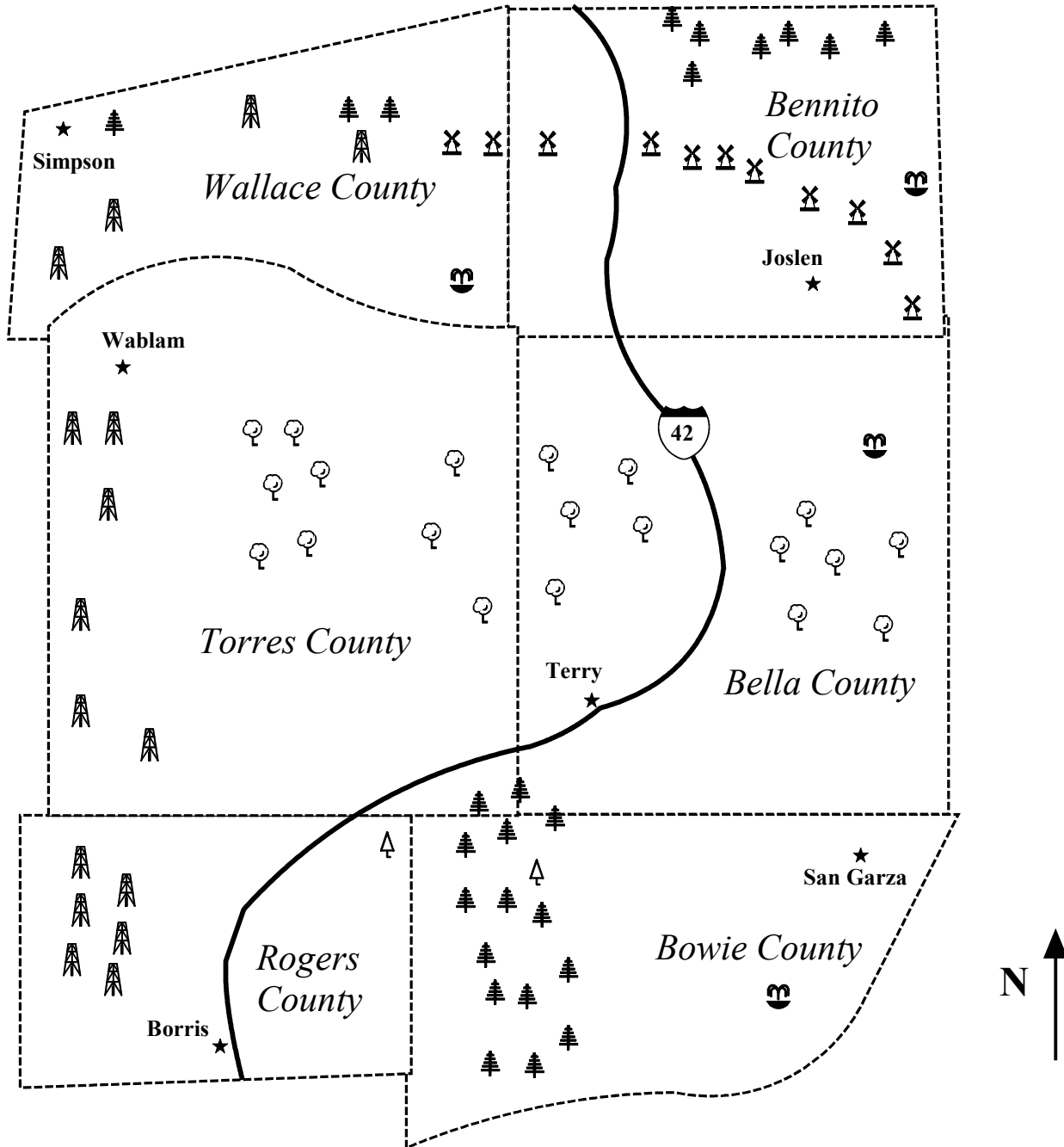
## Asia Political Relief Map

- Which of the following rivers is located in the Deccan Plateau?
  - Godavari
  - Syr Darya
  - Songhua
  - Tigris
- The capital of what country can be found on the Tropic of Cancer?
  - China
  - Malaysia
  - Oman
  - Japan
- Which city has the smallest population?
  - Almaty, Kazakhstan
  - Davao, Philippines
  - Herat, Afghanistan
  - Tabriz, Iran
- Which Asian country has territory above the Arctic Circle?
  - Norway
  - Mongolia
  - Finland
  - Russia
- A series of canals are indicated in what part of India?
  - Southwest
  - Northwest
  - Northeast
  - Southeast
- The International Date Line runs through which of the following?
  - Baltic Sea
  - Persian Gulf
  - Gulf of Anadyr
  - Celebes Sea
- The Turan Lowlands do not occupy which of the following countries?
  - Kyrgyzstan
  - Turkmenistan
  - Uzbekistan
  - Kazakhstan
- What city is located at 34.3853° N, 132.4553° E?
  - Xian, China
  - Hiroshima, Japan
  - Esfahan, Iran
  - Khabarovsk, Russia
- A disputed boundary can be found on the border of which country?
  - Pakistan
  - Oman
  - Syria
  - All of the above
- Which of the following is indicated as a small country?
  - Kyrgyzstan
  - East Timor
  - Singapore
  - Beirut
- The Hindu Kush is located in what country?
  - India
  - South Korea
  - Azerbaijan
  - Afghanistan
- How far is it from the capital of Syria to the capital of Iraq?
  - About 500 kilometers
  - About 750 kilometers
  - About 1,000 kilometers
  - About 1,500 kilometers
- What is the population of Sibiu, Malaysia?
  - Under 500,000
  - 500,000 to 1,000,000
  - Over 1,000,000
  - Over 2,000,000
- The New Siberian Islands are part of what country?
  - Russia
  - Indonesia
  - India
  - Turkey
- Which of the following forms a border between continents?
  - Yellow Sea
  - Ob River
  - Java Sea
  - Caucasus Mountains

# Southwestern Counties Natural Resource Map

Legend	
	Interstate 42
	County line
	Wind Turbine
	Timber
	Paper Mill
	Oil
	Hydroelectric Plant
	Cotton Farm
	County Seaty

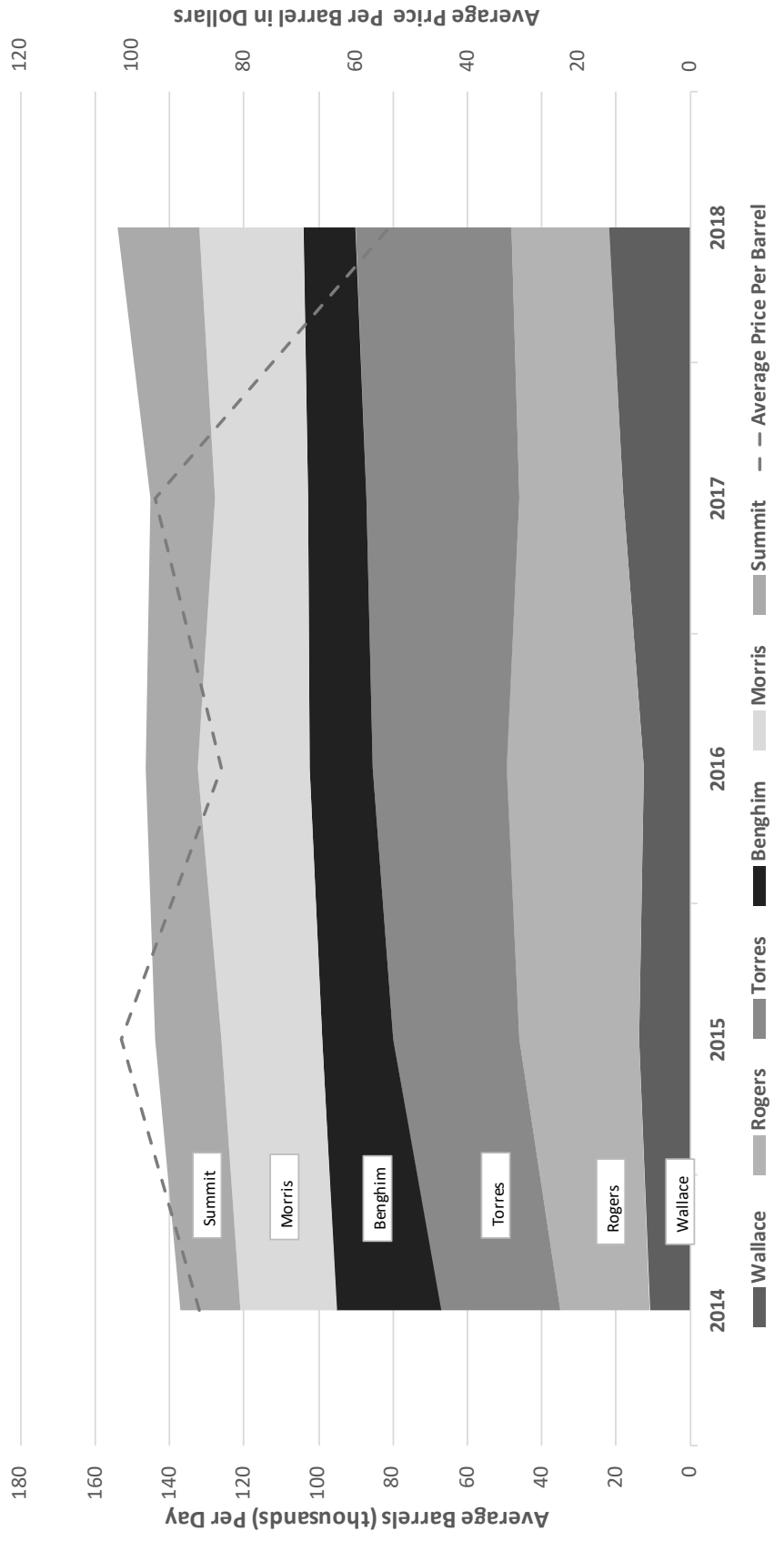
1 inch = 10 miles



## Southwestern Counties Natural Resources Map

16. How many counties are represented?
- 0
  - 2
  - 4
  - 6
17. What does the solid black line represent?
- Dirt road
  - Canal
  - Paved walkway
  - Interstate Highway
18. How far is it from Terry to San Garza?
- About 10 miles
  - About 20 miles
  - About 30 miles
  - About 40 miles
19. How many mines are shown on the map?
- 0
  - 3
  - 4
  - 5
20. What county seat is the furthest south?
- Bowie
  - Rogers
  - Terry
  - Joslen
21. Interstate 42 runs through how many counties on the map?
- 0
  - 3
  - 4
  - 6
22. How many paper mills are located in Bowie County?
- 1
  - 3
  - 5
  - 7
23. How many types of resources are located in Torres County?
- 0
  - 2
  - 4
  - 6
24. In how many counties is oil present?
- 1
  - 3
  - 5
  - 6
25. What resource is found the most often on the map?
- Cotton
  - Oil
  - Wind Turbine
  - Paper Mill
- TRUE/FALSE**
26. The most plentiful resource in Wallace county is Timber.
27. Bennito Country has bigger variety of resources than any other county.
28. The county seat in Bowie is located in the northeastern portion of the county.
29. All oil resources are located on the western half of the map.
30. Timber is the resource found in the most counties.

### Oil Production in the Southwestern Counties



## Oil Production in the Southwestern Counties

31. What is the first year indicated on the chart?
- 2016
  - 2018
  - 2017
  - 2014
32. What does the dotted line represent?
- The year
  - Average number of barrels per day
  - Average price per barrel
  - Oil production county
33. How many counties are represented on the graph?
- 0
  - 2
  - 6
  - 7
34. What county does the darkest area of the chart represent?
- Benghim
  - Morris
  - Summit
  - None of the above
35. What year had the highest combined production?
- 2018
  - 2017
  - 2016
  - 2015
36. What year had the highest average price per barrel?
- 2018
  - 2017
  - 2016
  - 2015
37. What year did Morris county produce the most?
- 2014
  - 2017
  - 2016
  - 2015
38. How often did the price fall below \$90 per barrel?
- 0
  - 1
  - 2
  - 3
39. What county produced the most in 2014?
- Wallace
  - Rogers
  - Torres
  - Benghim
40. What information is found on the X axis?
- The year
  - Average number of barrels per day
  - Average price per barrel
  - Oil production county
- TRUE/FALSE**
41. Torres county had the highest production the most years.
42. The year of lowest production had the highest average price per barrel.
43. Benghim production decreased every year.
44. Two counties increased production every year.
45. Oil production is represented in thousand barrels per year.



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## Antarctica and the Arctic

46. Which country has the highest amount of continuous permafrost?

- a. North America
- b. Sweden
- c. Finland
- d. Russia

47. Which has the coldest temperatures?

- a. The Arctic in January
- b. The Arctic in August
- c. Antarctica in January
- d. Antarctica in August

48. Which of the following is NOT a circle of latitude?

- a. Prime Meridian
- b. Tropic of Cancer
- c. Arctic Circle
- d. Tropic of Capricorn

49. What is the elevation, in meters, of the highest point in either The Arctic or Antarctica?

- a. Over 4,000
- b. Between 2,000 to 4,000
- c. Between 600 to 1,500
- d. Between 300 to 600

50. Greenland is part of what continent?

- a. Europe
- b. North America
- c. Asia
- d. Australia

51. The Kolyma Range is in what country?

- a. Russia
- b. North America
- c. Canada
- d. None of the above

52. What percentage of the Earth's land is covered in permafrost?

- a. About 10%
- b. About 15%
- c. About 25%
- d. About 35%

53. Which country has a research station closest to the South Pole?

- a. Russia
- b. United States
- c. Finland
- d. Canada

54. What does the white area with blue lines within the Arctic Circle indicate?

- a. Glacier
- b. Tundra
- c. Permafrost
- d. Sea Ice

### TRUE/FALSE

55. The largest ocean in the Arctic is larger than the largest one in Antarctica.

56. The Prime Meridian runs through both the South Pole and the North Pole.

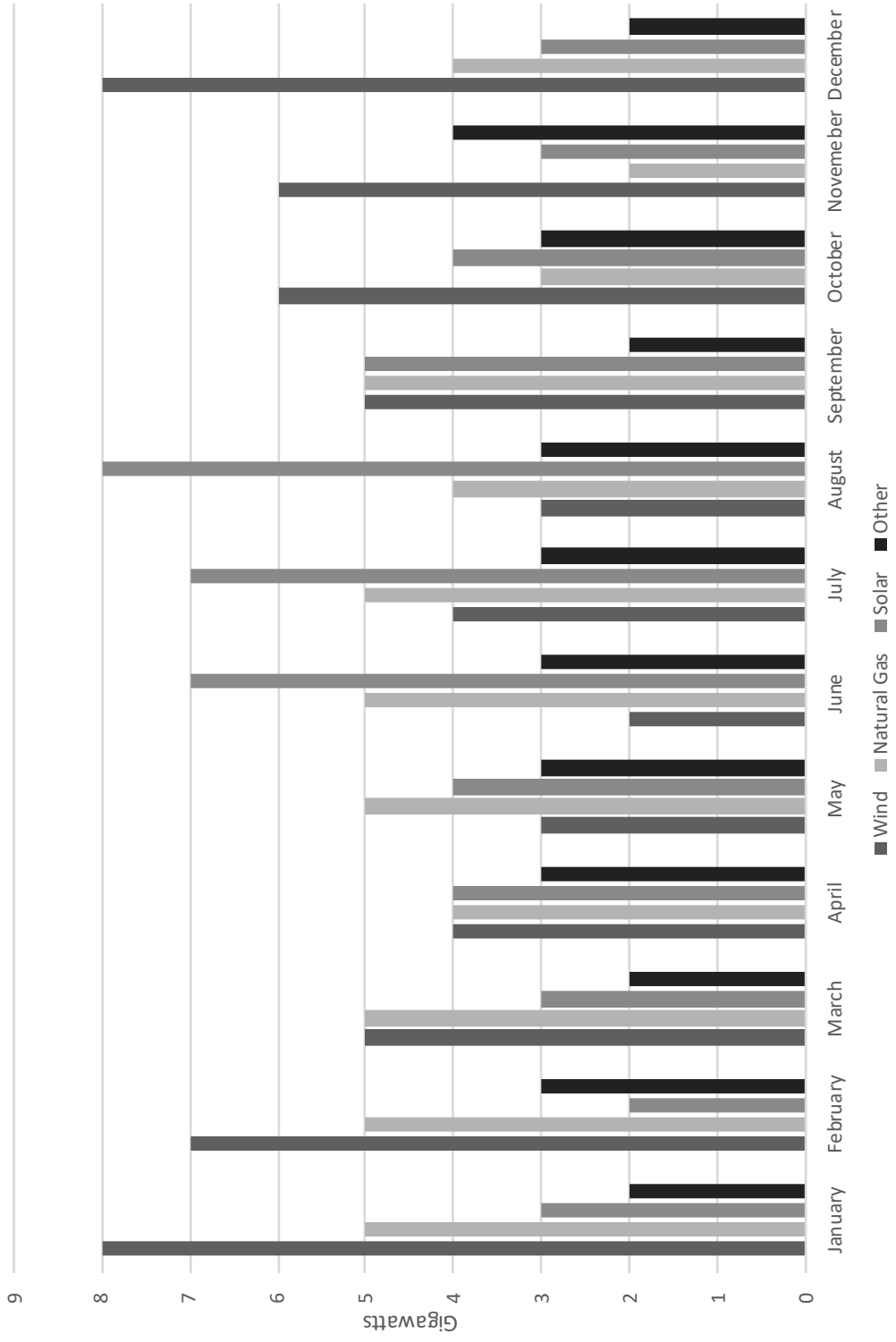
57. The southern coast of the Scandinavian Peninsula is mainly cropland.

58. The ice cap on the Polar Plateau is up to 4 miles thick.

59. Calving creates icebergs.

60. Most of the sea ice in the Arctic Circle lasts through September.

# Electricity Generation By Type



## Electricity Generation by Type

61. What span of time is covered by the graph?
- One week
  - One month
  - One year
  - Four years
62. What does the Y axis represent?
- The year
  - The month
  - Gigawatts
  - Revenue in dollars
63. What month did wind generate the most electricity?
- January
  - March
  - April
  - August
64. What generated the least amount of electricity in November?
- Wind
  - Natural Gas
  - Solar
  - Other
65. In how many months did wind generate more electricity than any other method?
- 4
  - 5
  - 7
  - 9
66. What does the darkest column on the graph represent?
- Wind
  - Natural Gas
  - Solar
  - Other
67. In how many months did total gigawatts for all methods combined exceed 20?
- 0
  - 2
  - 3
  - 4
68. How many methods of electricity production hit at least eight gigawatts in a single month?
- 0
  - 2
  - 3
  - 4
69. How many times did solar produce more electricity than natural gas?
- 1
  - 3
  - 5
  - 7
70. What level of data is represented here?
- County-wide
  - State-wide
  - Nation-wide
  - Information not stated
- TRUE/FALSE**
71. Every method of energy production produced at least two gigawatts a month.
72. Solar produced the most amount in the winter.
73. Wind had its lowest number of gigawatts produced in June.
74. In January, wind produced more electricity than all the other methods combined.
75. The highest month of electricity generation from solar was the lowest month for wind.



**University Interscholastic League**  
**A+ Maps/Graphs/Charts Contest • 2020-2021**  
**5/6 Spring District**  
**Answer Key**

1. A	26. F	51. A
2. C	27. F	52. C
3. C	28. T	53. B
4. D	29. T	54. D
5. B	30. T	55. F
6. C	31. D	56. T
7. A	32. C	57. F
8. B	33. C	58. F
9. A	34. A	59. T
10. C	35. A	60. T
11. D	36. D	61. C
12. A	37. C	62. C
13. A	38. D	63. A
14. A	39. C	64. B
15. D	40. A	65. B
16. D	41. T	66. D
17. D	42. F	67. A
18. B	43. T	68. B
19. A	44. F	69. C
20. C	45. F	70. D
21. C	46. D	71. T
22. A	47. D	72. F
23. B	48. A	73. T
24. B	49. A	74. F
25. A	50. B	75. F

CONTESTANT NUMBER:

**FOR GRADER USE ONLY**

Score Test Below:

\_\_\_\_\_ out of 250. Initials \_\_\_\_\_

\_\_\_\_\_ out of 250. Initials \_\_\_\_\_

**Papers contending to place:**

\_\_\_\_\_ out of 250. Initials \_\_\_\_\_



**University Interscholastic League  
A+ Mathematics Contest • Answer Sheet**

*Write your contestant number in the upper right corner, and circle your grade below.*

**Circle Grade Level:                    6           7           8**

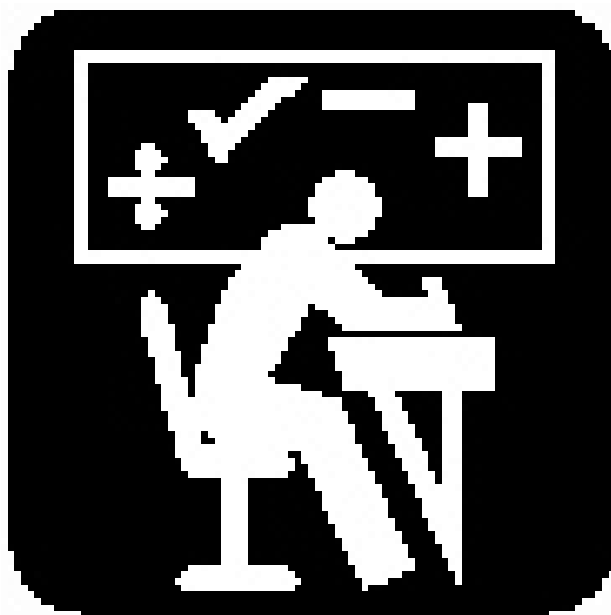
- |               |               |
|---------------|---------------|
| 1. A B C D E  | 26. A B C D E |
| 2. A B C D E  | 27. A B C D E |
| 3. A B C D E  | 28. A B C D E |
| 4. A B C D E  | 29. A B C D E |
| 5. A B C D E  | 30. A B C D E |
| 6. A B C D E  | 31. A B C D E |
| 7. A B C D E  | 32. A B C D E |
| 8. A B C D E  | 33. A B C D E |
| 9. A B C D E  | 34. A B C D E |
| 10. A B C D E | 35. A B C D E |
| 11. A B C D E | 36. A B C D E |
| 12. A B C D E | 37. A B C D E |
| 13. A B C D E | 38. A B C D E |
| 14. A B C D E | 39. A B C D E |
| 15. A B C D E | 40. A B C D E |
| 16. A B C D E | 41. A B C D E |
| 17. A B C D E | 42. A B C D E |
| 18. A B C D E | 43. A B C D E |
| 19. A B C D E | 44. A B C D E |
| 20. A B C D E | 45. A B C D E |
| 21. A B C D E | 46. A B C D E |
| 22. A B C D E | 47. A B C D E |
| 23. A B C D E | 48. A B C D E |
| 24. A B C D E | 49. A B C D E |
| 25. A B C D E | 50. A B C D E |

**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



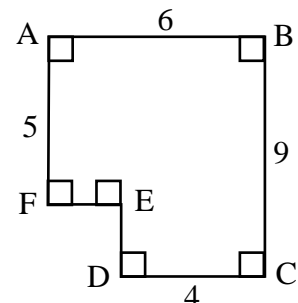
# Mathematics

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## 2020 – 2021 University Interscholastic League JH/MS Mathematics Contest A

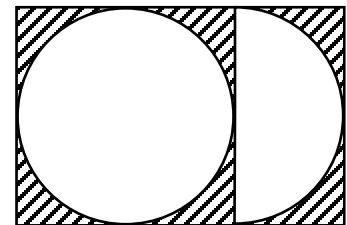
- (1) Evaluate:  $2^4 \div 2^3 \times 2^2 \div 2^1 \times 2^0 \div 2^{-1}$   
 A) 16                      B) 8                      C) 4                      D) 2                      E)  $\frac{1}{2}$
- (2) Twenty-five percent of twenty percent of 100 is equal to what amount?  
 A) 8                      B) 2.5                      C) 20                      D)  $\frac{1}{20}$                       E) 5
- (3)  $0.1 + 0.2 + 0.3 + \dots + 2.0 =$   
 A) 0.21                      B) 2.1                      C) 21                      D) 210                      E) 2.01
- (4) 15 hours = \_\_\_\_\_ minutes.  
 A) 900                      B) 90                      C) 4                      D) 360                      E) 9
- (5) What is the length of one side of a rectangle with perimeter of 24 cm if the adjacent side is 8 cm?  
 A) 8                      B) 4                      C) 16                      D) 2                      E) None of These
- (6) What is the total number of days between September 18<sup>th</sup> and December 25<sup>th</sup> in the same calendar year?  
 A) 99                      B) 98                      C) 97                      D) 96                      E) 95
- (7) If the sales tax for an item is  $6\frac{1}{4}\%$ , what does an item valued at \$8 cost including tax?  
 A) \$.85                      B) \$12.80                      C) \$8.63                      D) \$8.50                      E) \$8.05
- (8) 4.5% is equivalent to what fraction?  
 A)  $\frac{9}{100}$                       B)  $\frac{9}{20}$                       C)  $\frac{9}{200}$                       D)  $\frac{1}{45}$                       E)  $4\frac{1}{20}$
- (9) Twenty-four liquid ounces is equal to how many pints?  
 A) 1.5                      B)  $\frac{2}{3}$                       C)  $1\frac{2}{3}$                       D)  $\frac{3}{4}$                       E) 3
- (10) When it is 7:00 AM in Fort Worth, Texas, it is 8:00 AM in Fairfax, Virginia and 1:00 PM in London, England on the same day. So, if it is 2:00 AM in London on a Monday, what time is it in Fort Worth?  
 A) 1 AM Monday    B) 8 AM Sunday    C) 10 PM Monday    D) 1 PM Monday    E) 8 PM Sunday
- (11)  $0.008 \text{ km}^2 =$  \_\_\_\_\_  $\text{m}^2$ .  
 A) 8                      B) 80                      C) 800                      D) 8,000                      E) 800,000

- (12) What is the area of polygon ABCDEF to the right, in square units? (Note that figure is not drawn to scale.)  
 A) 24  
 B) 30  
 C) 46  
 D) 66  
 E) 74





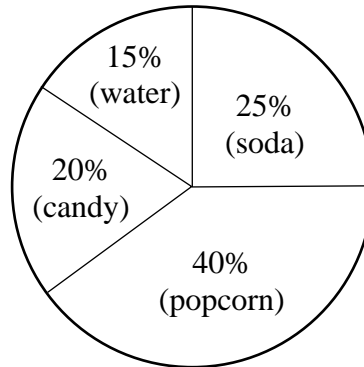
- (13) Richards Elementary School has 600 students. Each student takes 5 classes a day. Each teacher teaches 4 classes. Each class has 30 students and 1 teacher. How many teachers are there at Richards Elementary School?  
 A) 25                      B) 30                      C) 35                      D) 50                      E) 100
- (14) If the length and width of a rectangle are each increased by 20%, then the perimeter of the rectangle is increased by what percent?  
 A) 2%                      B) 20%                      C) 40%                      D) 200%                      E) 400%
- (15)  $4\frac{1}{8} \times 4\frac{7}{8} =$   
 A)  $16\frac{7}{64}$                       B)  $16\frac{7}{8}$                       C)  $20\frac{7}{8}$                       D)  $20\frac{7}{64}$                       E)  $18\frac{7}{8}$
- (16) If the area of a rhombus with diagonals 16 and  $d$  is 80, what is the length of the other diagonal?  
 A) 5                      B) 10                      C) 32                      D) 64                      E) 70
- (17) If  $\frac{3}{8} - \frac{1}{n} = \frac{1}{4}$ , then  $n =$   
 A)  $-\frac{1}{4}$                       B)  $-\frac{1}{8}$                       C)  $\frac{3}{32}$                       D) 4                      E) 8
- (18) If the mean of 16, 5 and  $m$  is 12, then what is  $m$ ?  
 A) -1                      B) 1                      C) 11                      D) 15                      E) 47
- (19) If your average score on your first six mathematics tests was 84 and your average score on your first seven mathematics tests was 85, then what is your score on the seventh test?  
 A) 86                      B) 88                      C) 90                      D) 91                      E) 92
- (20) A square and a triangle have equal perimeters. The lengths of the three sides of the triangle are 6.2 cm, 8.3 cm and 9.5 cm. What is the area of the square?  
 A)  $24 \text{ cm}^2$                       B)  $36 \text{ cm}^2$                       C)  $48 \text{ cm}^2$                       D)  $64 \text{ cm}^2$                       E)  $144 \text{ cm}^2$
- (21) 15 miles per hour = \_\_\_\_\_ feet per second (ft/s).  
 A) 60 ft/s                      B) 48 ft/s                      C) 44 ft/s                      D) 24 ft/s                      E) 22 ft/s
- (22) The figure to the right is a rectangle circumscribing a circle and a semicircle. If the area of the circle is  $4\pi$ , what is the shaded area equal to?  
 A)  $24 - 6\pi$   
 B)  $24 - 5\pi$   
 C)  $24 - 4\pi$   
 D)  $20 - 6\pi$   
 E)  $20 - 5\pi$



- (24) What is the sum of the two largest prime numbers less than 100?  
 A) 186                      B) 188                      C) 190                      D) 192                      E) 196

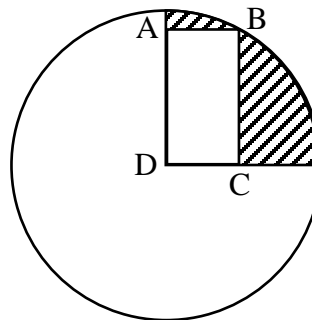
**For problems #25 – #28 please use the pie chart graph below.**

**Refreshments While at the Movies**

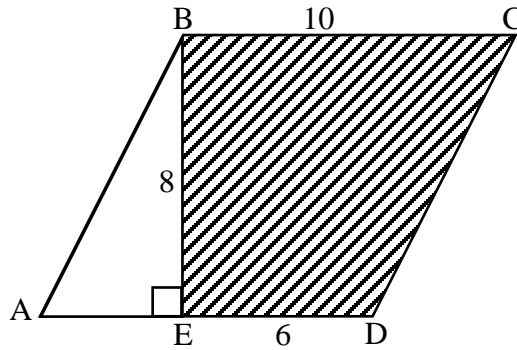


- (25) In a survey of 200 students from a local middle school the pie chart above gave a breakdown of favorite refreshments of the students when going to a movie theater. How many more students preferred soda to water as a refreshment?  
 A) 10                      B) 15                      C) 20                      D) 30                      E) 50
- (26) In a survey of 200 students from a local middle school, the pie chart above gave a breakdown of favorite refreshments of the students when going to a movie theater. If a box of popcorn cost \$2.50, how much money was spent buying popcorn?  
 A) \$200                      B) \$800                      C) \$80                      D) \$2,000                      E) \$500
- (27) In a survey of 200 students from a local middle school, the pie chart above gave a breakdown of favorite refreshments of the students when going to a movie theater. If the students bought a box of popcorn that cost \$2.50 plus a bottle of water that cost \$1.50, how much money was spent buying this combination of refreshments?  
 A) \$2,200                      B) \$800                      C) \$275                      D) \$440                      E) \$22,000
- (28) In a survey of 200 students from a local middle school, the pie chart above gave a breakdown of favorite refreshments of the students when going to a movie theater. How many students did not prefer to consume any beverage?  
 A) 80 students                      B) 120 students                      C) 60 students                      D) 160 students                      E) 125 students
- (29) A father, whose age is forty-two, has a daughter whose age is nine. In how many years will the age of the daughter be one-fourth that of the father?  
 A) 2 years                      B) 3 years                      C) 4 years                      D) 6 years                      E) 12 years
- (30) With a tail wind, a jet plane flew 2400 miles in 4 hours, but the plane required 6 hours for the return trip against the wind. What is the speed of the wind in miles per hour (mph)?  
 A) 25 mph                      B) 40 mph                      C) 50 mph                      D) 60 mph                      E) 100 mph
- (31) If  $5^{(x-2)} = 9$ , then  $5^x$  equals what number?  
 A) 25                      B) 36                      C) 90                      D) 225                      E) 900

- (32) What is the greatest common factor (GCF) for  $-18a^2b$  and  $30a^2$ ?  
 A)  $90ab$                       B)  $90a^2b$                       C)  $-90a^2b$                       D)  $6a^2b$                       E)  $6a^2$
- (33) The degree measures of three angles of a triangle have the ratio of  $4 : 4 : 7$ . What is the measure of the largest angle?  
 A)  $42^\circ$                       B)  $44^\circ$                       C)  $48^\circ$                       D)  $64^\circ$                       E)  $84^\circ$
- (34)  $0.08333 \dots =$   
 A)  $2\frac{1}{8}$                       B)  $2\frac{1}{3}$                       C)  $8\frac{1}{3}$                       D)  $\frac{83}{99}$                       E)  $\frac{1}{12}$
- (35) What is the area of a square with a diagonal length of 12-m?  
 A)  $144 \text{ m}^2$                       B)  $96 \text{ m}^2$                       C)  $84 \text{ m}^2$                       D)  $72 \text{ m}^2$                       E) None of these
- (36) What is the amount of simple interest for a loan of \$1200 at 8% annual interest rate for 9 months?  
 A) \$72                      B) \$60                      C) \$48                      D) \$36                      E) \$24
- (37) If the sum of  $x$  numbers is 56 and their arithmetic mean is 7, what is  $x$ ?  
 A) 14                      B) 28                      C) 56                      D) 112                      E) None of these
- (38) What is the probability of drawing a face card or a ten from a standard deck of 52 cards?  
 A)  $\frac{1}{8}$                       B)  $\frac{4}{13}$                       C)  $\frac{5}{26}$                       D)  $\frac{11}{26}$                       E)  $\frac{1}{13}$
- (39) How many whole numbers are between  $\sqrt{8}$  and  $\sqrt{80}$ ?  
 A) 5                      B) 6                      C) 7                      D) 8                      E) 9
- (40) If  $a*b$  means  $\frac{a+b}{2}$ , then  $(3*5)*8$  equals what number?  
 A) 6                      B) 8                      C) 12                      D) 16                      E) 30
- (41) An ancient society seemed to have measured angles in clics (cks). If there are 500 clics in a full circle, how many clics are in a right angle?  
 A) 90 cks                      B) 100 cks                      C) 125 cks                      D) 180 cks                      E) 250 cks
- (42) In the figure to the right ABCD is a rectangle. D is the center of the circle and B is on the circle. If  $AD = 4$  and  $CD = 3$ , then the area of shaded region is between  
 A) 4 and 5.  
 B) 5 and 6.  
 C) 6 and 7.  
 D) 7 and 8.  
 E) 8 and 9.

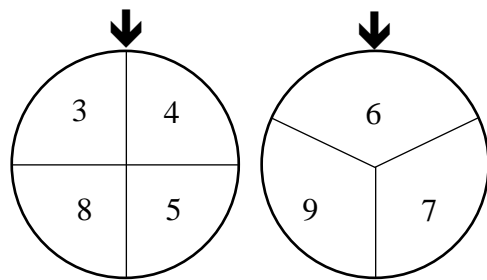


- (44) What is the area of the shaded region BCDE (in the figure to the right) in parallelogram ABCD?  
 A) 24  
 B) 48  
 C) 60  
 D) 64  
 E) 80



- (45) In how many ways can 47 be written as the sum of two primes?  
 A) 1                      B) 2                      C) 3                      D) 4                      E) None of these

- (46) Every time the two wheels in the illustration to the right are spun, two numbers are selected by the pointers. What is the probability that the sum of the two numbers selected is even?



- A)  $\frac{1}{6}$   
 B)  $\frac{3}{7}$   
 C)  $\frac{1}{2}$   
 D)  $\frac{2}{3}$   
 E) None of these
- (47) A dress originally priced at \$80 was put on sale at 25% off. If 10% tax was added to the sale price, then how much is the total selling price of the dress?  
 A) \$45                      B) \$52                      C) \$54                      D) \$66                      E) \$68
- (48) A black bag contains only blue marbles and green marbles. There are only 6 blue marbles. If the probability of drawing a blue marble at random is  $\frac{1}{4}$ , then how many green marbles are there in the bag?  
 A) 12                      B) 18                      C) 24                      D) 30                      E) 36
- (49) There are 120 seats in a row. What is the fewest number of seats that must be occupied so the next person to be seated must sit next to someone?  
 A) 30                      B) 40                      C) 41                      D) 60                      E) 119
- (50) A straight concrete sidewalk is to be 3 feet wide, 60 feet long and 3 inches thick. How many cubic yards of concrete must a contractor order for the sidewalk if concrete must be ordered in a whole number of cubic yards?  
 A) 2 yds<sup>3</sup>                      B) 5 yds<sup>3</sup>                      C) 12 yds<sup>3</sup>                      D) 20 yds<sup>3</sup>                      E) 22 yds<sup>3</sup>

**2020 – 2021 University Interscholastic League JH/MS Mathematics Contest A – Key**

- (1) B
- (2) E
- (3) C
- (4) A
- (5) B
- (6) C
- (7) D
- (8) C
- (9) E
- (10) E
- (11) C
- (12) C
- (13) A
- (14) B
- (15) D
- (16) B
- (17) E
- (18) D
- (19) D
- (20) B
- (21) E
- (22) A
- (23) D
- (24) A
- (25) C

- (26) A
- (27) D
- (28) B
- (29) A
- (30) E
- (31) D
- (32) E
- (33) E
- (34) E
- (35) D
- (36) A
- (37) E (8)
- (38) B
- (39) B
- (40) A
- (41) C
- (42) D
- (43) C
- (44) D
- (45) E (There are NO two primes that add to 47.)
- (46) C
- (47) D
- (48) B
- (49) B
- (50) A

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League

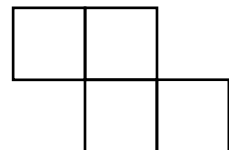


# Mathematics

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

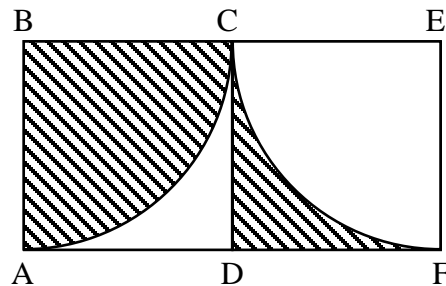
## 2020 – 2021 University Interscholastic League JH/MS Mathematics Contest B

- (1) Evaluate:  $32 \times 2^{-3} \div 2^{-1} \div 2^0$   
A) 24                      B) 16                      C) 8                      D) 4                      E) 0
- (2) The sum of twenty-five percent and twenty percent of 30 is equal to what amount?  
A)  $16\frac{1}{2}$                       B)  $1\frac{1}{5}$                       C)  $13\frac{1}{2}$                       D)  $\frac{9}{25}$                       E) 6
- (3)  $8 - 1.0 - 0.9 - 0.8 - \dots - 0.1 =$   
A) 5.5                      B) 4.5                      C) 3.5                      D) 2.5                      E) 2.25
- (4) 22 gallons = \_\_\_\_\_ quarts.  
A) 176                      B) 88                      C) 72                      D) 44                      E) 36
- (5) What is the perimeter of a square with an area of 64?  
A) 4                      B) 8                      C) 16                      D) 32                      E) 128
- (6) What is the total number of days between September 18<sup>th</sup> and October 26<sup>th</sup> in the same calendar year?  
A) 12                      B) 18                      C) 24                      D) 36                      E) None of these
- (7) If the sales tax for an item is  $7\frac{1}{2}\%$ , what does an item valued at \$2 cost including tax?  
A) \$.15                      B) \$2.15                      C) \$7.50                      D) \$14.00                      E) \$14.50
- (8) Three-sixteenths is equivalent to what percent?  
A)  $18\frac{3}{4}\%$                       B)  $16\frac{1}{2}\%$                       C)  $16\frac{3}{4}\%$                       D)  $18\frac{1}{4}\%$                       E)  $6\frac{1}{4}\%$
- (9)  $140000 \text{ cm}^2 =$  \_\_\_\_\_  $\text{m}^2$ .  
A) 1,400                      B) 14                      C) 1.4                      D) 0.14                      E) 0.014
- (10) Wesley and Noah are each riding a bicycle towards each other. They are initially 105 feet from each other. Wesley's average speed is 15 feet/second while Noah's average speed is 20 feet/second. How long does it take the brothers to reach each other?  
A) 3 seconds                      B) 0.3 second                      C) 5.25 seconds                      D) 7 seconds                      E) 12.25 seconds
- (11) If the measurement of one rod equals 16.5 feet, how many rods are in one mile?  
A)  $106\frac{2}{3}$  rods                      B) 160 rods                      C) 320 rods                      D) 640 rods                      E) 1,760 rods
- (12) The figure to the right consists of four identical size squares. If the total area enclosed by the squares is 64 square inches, what is the perimeter of the figure?  
A) 40 inches  
B) 44 inches  
C) 48 inches  
D) 64 inches  
E) 72 inches



- (13) How many quarter-inch cubes does it take to make a single one-inch cube?  
 A) 4                      B) 16                      C) 48                      D) 64                      E) 128
- (14) If the length of the diameter of a circle is doubled, then the circle's area is increased by what factor?  
 A) 2                      B) 4                      C)  $2\pi$                       D) 8                      E)  $4\pi$
- (15)  $6\frac{1}{3} \times 3\frac{1}{3} =$   
 A)  $21\frac{1}{9}$                       B)  $18\frac{1}{3}$                       C)  $18\frac{1}{9}$                       D)  $21\frac{1}{3}$                       E)  $19\frac{1}{9}$
- (16) If the area of a trapezoid with bases 4, 6 and altitude  $h$  is 80, what is the length of the altitude?  
 A) 8                      B) 10                      C) 12                      D) 14                      E) 16
- (17) If  $\frac{1}{6} - \frac{1}{n} = \frac{1}{4}$ , then  $n =$   
 A)  $-\frac{1}{12}$                       B)  $-\frac{1}{2}$                       C)  $\frac{1}{12}$                       D) -12                      E) 12
- (18) If the mean of 12, 8 and  $m$  is 4, then what is  $m$ ?  
 A) -8                      B) 3                      C) 6                      D) 10                      E) 12
- (19) The first side of a triangle is 2 inches shorter than 4 times the second side. The third side is 8 inches longer than the second side. If the perimeter is 12 feet, find the length of the longest side.  
 A) 9 feet                      B) 23 inches                      C) 5 feet                      D) 31 inches                      E) 90 inches
- (20) On a Texas map the distance between Ft. Worth and El Paso is 5 inches. The approximate distance is 550 miles. If the distance between Arlington and Sarita is 3.5 inches on the same map. What is the approximate distance from Arlington to Sarita to the nearest mile?  
 A) 320 miles                      B) 385 miles                      C) 395 miles                      D) 415 miles                      E) 420 miles
- (21) 18 kilometers per hour = \_\_\_\_\_ meters per second (m/s).  
 A)  $64\frac{4}{5}$  m/s                      B) 32 m/s                      C) 10 m/s                      D) 5 m/s                      E)  $\frac{5}{18}$  m/s

- (22) Quadrilaterals ABCD and DCEF to the right are congruent squares with each side being 10 cm in length. Arcs AC and arc CF are quarter circles. What is the area of the shaded portion?  
 A)  $10\text{ cm}^2$   
 B)  $40\text{ cm}^2$   
 C)  $50\text{ cm}^2$   
 D)  $80\text{ cm}^2$   
 E)  $100\text{ cm}^2$



- (23) How many whole numbers will evenly divide into  $2^3 \times 3^2 \times 5^1$ ?  
 A) 6                      B) 8                      C) 10                      D) 12                      E) 24



- (24) Dan is building 2 rabbit cages in the shape of rectangular prisms. The first cage is 3 feet long, 2 feet wide, and 2 feet high. The second cage has the same width and height but is twice as long. How many times larger is the volume of the second cage compared to the volume of the first cage?  
 A) 2                      B) 4                      C) 5                      D) 6                      E) 8

**For problems #25 – #29 please use the chart below.**

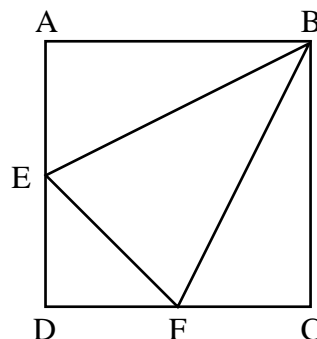
**Miles Run Each Week**

Week	Miles
1	2
2	5
3	8
4	11

- (25) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. If the pattern continued how many miles did she run by the end of the twentieth week?  
 A) 40 miles              B) 43 miles              C) 56 miles              D) 59 miles              E) 62 miles
- (26) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. What is the mean number of miles she ran in the first three weeks?  
 A) 15 miles              B) 10 miles              C) 5 miles              D) 3 miles              E) 2 miles
- (27) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. What is the total number of miles she ran in the first five weeks?  
 A) 40 miles              B) 41 miles              C) 44 miles              D) 47 miles              E) 50 miles
- (28) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. If she took a total of 10 hours to run her total miles during week 17, what was her average speed for that week in miles per hour (mph)?  
 A)  $2\frac{1}{2}$  mph              B) 4 mph              C)  $4\frac{1}{2}$  mph              D) 5 mph              E) 50 mph
- (29) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. If the length of a single lap around the local high school track is 440 yards and there are 1,760 yards per mile, how many laps did Amanda run in week 7?  
 A) 120 laps              B) 80 laps              C) 68 laps              D) 44 laps              E) 40 laps
- (30) With a current, a raft traveled 20 miles in 4 hours, but the raft required 6 hours for the return trip against the current. What is the speed of the current in miles per hour (mph)?  
 A)  $1\frac{1}{2}$  mph              B)  $1\frac{5}{6}$  mph              C)  $\frac{5}{6}$  mph              D)  $1\frac{1}{3}$  mph              E)  $1\frac{1}{6}$  mph
- (31) If  $3^x$  equals  $\frac{9^2 \times 27^3}{3^5}$ , then what is  $x$  equal to?  
 A) 6                      B) 7                      C) 8                      D) 9                      E) 10

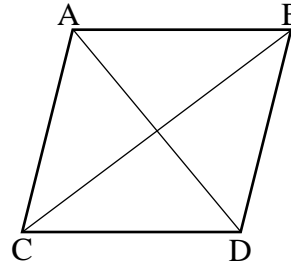
- (32) What is the product of the GCF and LCM of 25 and 44?  
 A) 1,100                      B) 825                      C) 750                      D) 550                      E) 500
- (33) The degree measures of three angles of a triangle have the ratio of 3 : 4 : 5. What is the measure of the largest angle?  
 A) 15°                      B) 45°                      C) 60°                      D) 75°                      E) 90°
- (34)  $0.08333 \dots + 0.666 \dots =$   
 A)  $1\frac{3}{4}$                       B)  $\frac{3}{4}$                       C)  $1\frac{50}{99}$                       D)  $\frac{1874}{2499}$                       E)  $\frac{7}{12}$
- (35) What is the diagonal length of a square with area  $98 \text{ km}^2$ ?  
 A) 14 km                      B)  $98\sqrt{2}$  km                      C) 28 km                      D) 12 km                      E) 16 km
- (36) What is the amount of simple interest for a loan of \$1200 at 6% annual interest rate for 8 months?  
 A) \$576                      B) \$288                      C) \$48                      D) \$44                      E) \$40
- (37) What is the product of the mean and median for the numbers: 12, 4, 8 and 6?  
 A) 49                      B) 52                      C)  $52\frac{1}{2}$                       D)  $49\frac{1}{2}$                       E) 51
- (38) What is the probability of drawing a king or an ace from a standard deck of 52 cards?  
 A)  $\frac{1}{13}$                       B)  $\frac{4}{13}$                       C)  $\frac{3}{13}$                       D)  $\frac{5}{26}$                       E)  $\frac{2}{13}$
- (39) What is the distance between -12 and 8 on the number line?  
 A) 4                      B) 6                      C) 8                      D) 12                      E) 20
- (40) If  $a*b$  means  $\frac{a-b}{2}$ , then  $(4*8)*10$  equals what number?  
 A) 6                      B) -6                      C) -12                      D) -2                      E) 4
- (41) In a certain country,  $12\frac{1}{2}$  Wonkas (Wnk) equals \$1. At this rate of currency exchange, what does \$16 equal in Wonkas?  
 A) 200 Wnk                      B) 128 Wnk                      C) 150 Wnk                      D) 78 Wnk                      E) 192 Wnk

- (42) In the figure to the right quadrilateral ABCD is a square with  $AB = 2-m$ ,  $DE = 1-m$  and  $DF = 1-m$ . What is the area of triangle BFE?  
 A)  $1 \text{ m}^2$   
 B)  $\frac{3}{2} \text{ m}^2$   
 C)  $\frac{5}{2} \text{ m}^2$   
 D)  $2 \text{ m}^2$   
 E)  $3 \text{ m}^2$



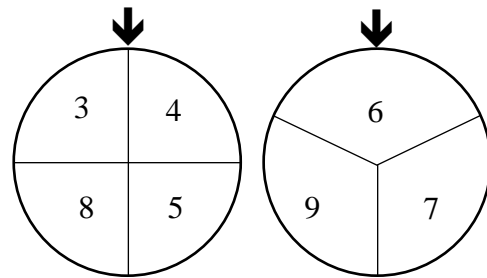
- (43) Genny, who weighs 150 lbs. sits at one end of a 20-ft seesaw balanced at the middle. How far from the middle should Andy, who weighs 200 pounds, sit to balance the seesaw?  
 A)  $2\frac{1}{2}$  ft.      B)  $3\frac{3}{4}$  ft.      C) 5 ft.      D)  $7\frac{1}{2}$  ft.      E)  $7\frac{3}{4}$  ft.

- (44) What is the area of the rhombus ABCD to the right if diagonal AD = 18 cm and diagonal BC = 24 cm?  
 A)  $216\text{ cm}^2$   
 B)  $240\text{ cm}^2$   
 C)  $324\text{ cm}^2$   
 D)  $405\text{ cm}^2$   
 E)  $432\text{ cm}^2$



- (45) In how many ways can 24 be written as the sum of two primes?  
 A) 1      B) 2      C) 3      D) 4      E) 5

- (46) Every time the two wheels in the illustration to the right are spun, two numbers are selected by the pointers. What is the probability that the sum of the two numbers selected is a prime number?



- A)  $\frac{1}{2}$   
 B)  $\frac{1}{4}$   
 C)  $\frac{1}{3}$   
 D)  $\frac{2}{3}$   
 E) None of these
- (47) A coat originally priced at \$100 was put on sale at 30% off. If 10% tax was added to the sale price, then how much is the total selling price of the coat?  
 A) \$84      B) \$77      C) \$75.50      D) \$37.50      E) \$33
- (48) A black bag contains only blue marbles and green marbles. There are only 12 blue marbles. If the probability of drawing a blue marble at random is  $\frac{2}{3}$ , then how many green marbles are there in the bag?  
 A) 12      B) 18      C) 4      D) 8      E) 6
- (49) During the softball season, Mackenzie had 35 hits. Among her hits were 1 home run, 1 triple and 5 doubles. The rest of her hits were singles. What percent of her hits were singles?  
 A) 28%      B) 35%      C) 70%      D) 75%      E) 80%
- (50) What is the 2020<sup>th</sup> letter in the sequence:  
 ABCDEDCBAABCDEDCBAABCDEDCBA...?  
 A) A      B) B      C) C      D) D      E) E

**2020 – 2021 University Interscholastic League JH/MS Mathematics Contest B – Key**

- (1) C
- (2) C
- (3) D
- (4) B
- (5) D
- (6) E (37)
- (7) B
- (8) A
- (9) B
- (10) A
- (11) C
- (12) A
- (13) D
- (14) B
- (15) A
- (16) E
- (17) E
- (18) A
- (19) E
- (20) B
- (21) D
- (22) E
- (23) E
- (24) A
- (25) D

- (26) C
- (27) A
- (28) D
- (29) B
- (30) C
- (31) C
- (32) A
- (33) D
- (34) B
- (35) A
- (36) C
- (37) C
- (38) E
- (39) E
- (40) B
- (41) A
- (42) B
- (43) D
- (44) A
- (45) D
- (46) C
- (47) B
- (48) E
- (49) E
- (50) D

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League

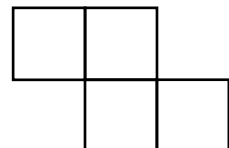


# Mathematics

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

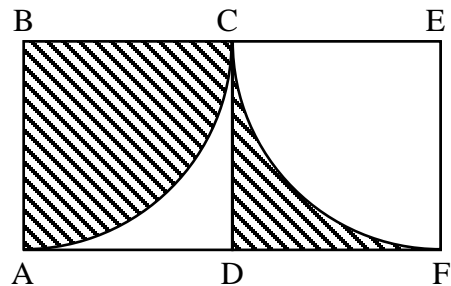
# 2020 – 2021 University Interscholastic League JH/MS Mathematics Contest C

- (1) Evaluate:  $81 \times 3^{-3} \div 3^{-1} + 3^0$   
A) 10                      B) 9                      C) 3                      D) 2                      E) 0
- (2) The sum of twenty-five percent and twenty percent of 50 is equal to what amount?  
A)  $22\frac{1}{2}$                       B)  $4\frac{1}{8}$                       C)  $15\frac{1}{10}$                       D) 10                      E) 5
- (3)  $10 - 1.0 - 0.9 - 0.8 - \dots - 0.1 =$   
A) 5.5                      B) 4.5                      C) 4.25                      D) 3.75                      E) 2.5
- (4) 24 gallons = \_\_\_\_\_ quarts.  
A) 3                      B) 6                      C) 12                      D) 48                      E) 96
- (5) What is the perimeter of a square with an area of 144?  
A) 12                      B) 24                      C) 36                      D) 48                      E) 72
- (6) What is the total number of days between June 6<sup>th</sup> and July 30<sup>th</sup> in the same calendar year?  
A) 24                      B) 29                      C) 53                      D) 54                      E) 55
- (7) If the sales tax for an item is  $7\frac{1}{2}\%$ , what does an item valued at \$4 cost including tax?  
A) \$4.30                      B) \$4.20                      C) \$7.50                      D) \$12.50                      E) \$14.30
- (8) Five-sixteenths is equivalent to what percent?  
A)  $15\frac{3}{4}\%$                       B)  $16\frac{1}{4}\%$                       C)  $16\frac{3}{4}\%$                       D)  $31\frac{1}{4}\%$                       E)  $6\frac{1}{4}\%$
- (9)  $16000 \text{ cm}^2 =$  \_\_\_\_\_  $\text{m}^2$ .  
A) 1,600                      B) 16                      C) 1.6                      D) 0.16                      E) 0.01
- (10) Wesley and Noah are each riding a bicycle towards each other. They are initially 200 feet from each other. Wesley's average speed is 12 feet/second while Noah's average speed is 8 feet/second. How long does it take the brothers to reach each other?  
A) 25 seconds                      B) 20 seconds                      C) 10 seconds                      D) 8 seconds                      E) 5 seconds
- (11) If the measurement of one rod equals 16.5 feet, how many rods are in one-half mile?  
A)  $106\frac{2}{3}$  rods                      B) 160 rods                      C) 320 rods                      D) 640 rods                      E) 1,760 rods
- (12) The figure to the right consists of four identical size squares. If the total area enclosed by the squares is 144 square inches, what is the perimeter of the figure?  
A) 36 inches  
B) 44 inches  
C) 48 inches  
D) 60 inches  
E) 70 inches



- (13) How many half-inch cubes does it take to make a single one-inch cube?  
 A) 2                      B) 4                      C) 6                      D) 8                      E) 16
- (14) If the length of the diameter of a circle is tripled, then the circle's area is increased by what factor?  
 A) 3                      B) 6                      C) 9                      D)  $3\pi$                       E)  $9\pi$
- (15)  $8\frac{1}{4} \times 4\frac{1}{4} =$   
 A)  $32\frac{1}{4}$                       B)  $32\frac{1}{16}$                       C)  $44\frac{1}{4}$                       D)  $40\frac{1}{4}$                       E)  $35\frac{1}{16}$
- (16) If the area of a trapezoid with bases 4, 5 and altitude  $h$  is 18, what is the length of the altitude?  
 A) 4                      B) 6                      C) 8                      D) 9                      E) 12
- (17) If  $\frac{1}{8} - \frac{1}{n} = \frac{1}{4}$ , then  $n =$   
 A)  $-\frac{1}{8}$                       B)  $-\frac{1}{4}$                       C) -8                      D)  $\frac{1}{8}$                       E) 4
- (18) If the mean of 10, 6 and  $m$  is 4, then what is  $m$ ?  
 A) 4                      B) 8                      C) -4                      D) -12                      E) -8
- (19) The first side of a triangle is 2 inches shorter than 4 times the second side. The third side is 8 inches longer than the second side. If the perimeter is 8 feet, find the length of the longest side.  
 A) 6 feet                      B) 58 inches                      C) 7 feet                      D) 62 inches                      E) 64 inches
- (20) On a Texas map the distance between Ft. Worth and El Paso is 5 inches. The approximate distance is 550 miles. If the distance between my home and a deer lease is 2.5 inches on the same map. What is the approximate distance from my home to deer lease to the nearest mile?  
 A) 1,375 miles                      B) 660 miles                      C) 575 miles                      D) 275 miles                      E) 110 miles
- (21) 36 kilometers per hour = \_\_\_\_\_ meters per second (m/s).  
 A)  $64\frac{4}{5}$  m/s                      B) 32 m/s                      C) 10 m/s                      D) 5 m/s                      E)  $\frac{5}{18}$  m/s

- (22) Quadrilaterals ABCD and DCEF to the right are congruent squares with each side being 12 cm in length. Arcs AC and arc CF are quarter circles. What is the area of the shaded portion?  
 A)  $36 \text{ cm}^2$   
 B)  $40 \text{ cm}^2$   
 C)  $60 \text{ cm}^2$   
 D)  $144 \text{ cm}^2$   
 E)  $288 \text{ cm}^2$



- (23) How many whole numbers will evenly divide into  $2^2 \times 3^2 \times 5^4$ ?  
 A) 16                      B) 24                      C) 36                      D) 48                      E) 45

- (24) Dan is building 2 rabbit cages in the shape of rectangular prisms. The first cage is 3 feet long, 2 feet wide, and 2 feet high. The second cage has the same width and height but is three times as long. How many times larger is the volume of the second cage compared to the volume of the first cage?
- A) 2                      B) 3                      C) 9                      D) 12                      E) 18

**For problems #25 – #29 please use the chart below.**

**Miles Run Each Week**

Week	Miles
1	3
2	5
3	7
4	9

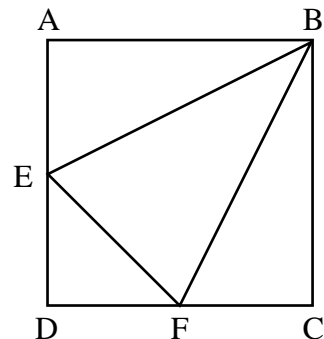
- (25) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. If the pattern continued how many miles did she run by the end of the twentieth week?
- A) 40 miles              B) 41 miles              C) 43 miles              D) 45 miles              E) 47 miles
- (26) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. What is the mean number of miles she ran in the first three weeks?
- A) 15 miles              B) 10 miles              C) 5 miles              D) 3 miles              E) 2 miles
- (27) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. What is the total number of miles she ran in the first five weeks?
- A) 30 miles              B) 31 miles              C) 32 miles              D) 35 miles              E) 37 miles
- (28) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. If she took a total of 10 hours to run her total miles during week 17, what was her average speed for that week in miles per hour (mph)?
- A)  $3\frac{1}{2}$  mph              B) 4 mph              C)  $4\frac{1}{2}$  mph              D) 5 mph              E)  $5\frac{1}{2}$  mph
- (29) Amanda ran for exercise. The table above shows the total number of miles she ran through the end of each week. If the length of a single lap around the local high school track is 440 yards and there are 1,760 yard per mile, how many laps did Amanda run in week 7?
- A) 4 laps              B) 8 laps              C) 16 laps              D) 48 laps              E) 60 laps
- (30) With a current, a raft traveled 20 miles in 4 hours, but the raft required 8 hours for the return trip against the current. What is the speed of the current in miles per hour (mph)?
- A)  $1\frac{1}{2}$  mph              B)  $1\frac{3}{4}$  mph              C)  $\frac{3}{4}$  mph              D)  $1\frac{1}{4}$  mph              E)  $1\frac{1}{3}$  mph
- (31) If  $2^x$  equals  $\frac{4^2 \times 8^3}{2^5}$ , then what is  $x$  equal to?
- A) 5                      B) 6                      C) 8                      D) 10                      E) 19



- (32) What is the product of the GCF and LCM of 16 and 25?  
 A) 100                      B) 120                      C) 250                      D) 320                      E) 400
- (33) The degree measures of three angles of a triangle have the ratio of 6 : 8 : 10. What is the measure of the largest angle?  
 A) 15°                      B) 45°                      C) 60°                      D) 75°                      E) 90°
- (34)  $0.444 \dots + 0.666 \dots =$   
 A) 1                      B)  $1\frac{1}{10}$                       C)  $1\frac{1}{9}$                       D)  $\frac{9}{10}$                       E)  $1\frac{2}{9}$
- (35) What is the diagonal length of a square with area  $18 \text{ km}^2$ ?  
 A) 12 km                      B)  $18\sqrt{2}$  km                      C) 6 km                      D) 36 km                      E) 40 km
- (36) What is the amount of simple interest for a loan of \$800 at 6% annual interest rate for 8 months?  
 A) \$32                      B) \$36                      C) \$40                      D) \$44                      E) \$48
- (37) What is the product of the mean and median for the numbers: 12, 10, 8 and 6?  
 A) 9                      B) 81                      C) 18                      D) 90                      E) 72
- (38) What is the probability of drawing a queen or an ace from a standard deck of 52 cards?  
 A)  $\frac{1}{13}$                       B)  $\frac{4}{13}$                       C)  $\frac{3}{13}$                       D)  $\frac{5}{26}$                       E)  $\frac{2}{13}$
- (39) What is the distance between -12 and 12 on the number line?  
 A) 0                      B) 6                      C) 12                      D) 24                      E) 36
- (40) If  $a*b$  means  $\frac{a-b}{2}$ , then  $(6*8)*9$  equals what number?  
 A) -5                      B) -10                      C) 5                      D) -6                      E) 6
- (41) In a certain country  $12\frac{1}{2}$  Wonkas (Wnk) equals \$1. At this rate of currency exchange what does \$24 equal in Wonkas?  
 A) 200 Wnk                      B) 300 Wnk                      C) 350 Wnk                      D) 416 Wnk                      E) 450 Wnk

- (42) In the figure to the right quadrilateral ABCD is a square with  $AB = 4\text{-m}$ ,  $DE = 2\text{-m}$  and  $DF = 2\text{-m}$ . What is the area of triangle BFE?

- A)  $16 \text{ m}^2$   
 B)  $12 \text{ m}^2$   
 C)  $10 \text{ m}^2$   
 D)  $8 \text{ m}^2$   
 E)  $6 \text{ m}^2$

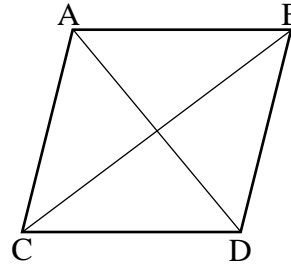


(43) Genny, who weighs 150 lbs. sits at one end of a 12-ft seesaw balanced at the middle. How far from the middle should Andy, who weighs 200 pounds, sit to balance the seesaw?

- A) 9 ft.                      B)  $4\frac{3}{4}$  ft.                      C)  $4\frac{1}{2}$  ft.                      D) 5 ft.                      E)  $5\frac{1}{4}$  ft.

(44) What is the area of the rhombus ABCD to the right  
If diagonal AD = 10 cm and diagonal BC = 12 cm?

- A)  $120\text{ cm}^2$   
B)  $44\text{ cm}^2$   
C)  $60\text{ cm}^2$   
D)  $432\text{ cm}^2$   
E)  $110\text{ cm}^2$

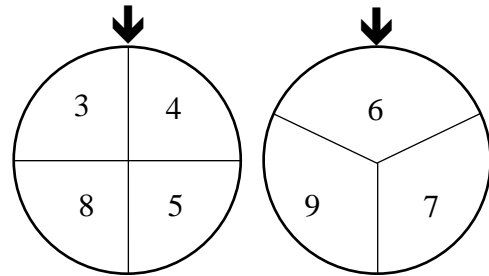


(45) In how many ways can 28 be written as the sum of two primes?

- A) 1                      B) 2                      C) 3                      D) 4                      E) 5

(46) Every time the two wheels in the illustration to the right are spun two numbers are selected pointers. What is the probability that the sum of the two numbers selected is divisible by 3?

- A)  $\frac{1}{2}$   
B)  $\frac{1}{4}$   
C)  $\frac{1}{3}$   
D)  $\frac{2}{3}$   
E)  $\frac{1}{6}$



(47) A coat originally priced at \$100 was put on sale at 40% off. If 10% tax was added to the sale price, then how much is the total selling price of the coat?

- A) \$44.40                      B) \$44                      C) \$70                      D) \$66                      E) \$77.30

(48) A black bag contains only blue marbles and green marbles. There are only 16 blue marbles. If the probability of drawing a blue marble at random is  $\frac{2}{3}$ , then how many green marbles are there in the bag?

- A) 12                      B) 18                      C) 4                      D) 8                      E) 6

(49) During the softball season, Mackenzie had 40 hits. Among her hits were 3 home runs, 2 triples and 5 doubles. The rest of her hits were singles. What percent of her hits were singles?

- A) 10%                      B) 30%                      C) 60%                      D) 75%                      E) 80%

(50) What is the 2021<sup>st</sup> letter in the sequence:

ABCDED CBA ABCDED CBA ABCDED CBA . . . ?

- A) A                      B) B                      C) C                      D) D                      E) E

## 2020 – 2021 University Interscholastic League JH/MS Mathematics Contest C – Key

- (1) A
- (2) A
- (3) B
- (4) E
- (5) D
- (6) C
- (7) A
- (8) D
- (9) C
- (10) C
- (11) B
- (12) D
- (13) D
- (14) C
- (15) E
- (16) A
- (17) C
- (18) C
- (19) B
- (20) D
- (21) C
- (22) D
- (23) E
- (24) B
- (25) B

- (26) C
- (27) D
- (28) A
- (29) E
- (30) D
- (31) C
- (32) E
- (33) D
- (34) C
- (35) C
- (36) A
- (37) B
- (38) E
- (39) D
- (40) A
- (41) B
- (42) E
- (43) C
- (44) C
- (45) B
- (46) C
- (47) D
- (48) D
- (49) D
- (50) E

**University Interscholastic League**  
**2020 – 2021 Elementary Number Sense Test A**

Contestant's Number \_\_\_\_\_

Final		
2 <sup>nd</sup>		
1 <sup>st</sup>		
<b>Score</b>	<b>Initials</b>	

**Read Directions Carefully  
Before Beginning Test**

**Do Not Unfold This Sheet  
Until Told to Begin**

Directions: Do not turn this page until the person conducting this test gives the signal to begin. This is a ten-minute test. There are 80 problems. Solve accurately and quickly as many as you can in the order in which they appear. **ALL PROBLEMS ARE TO BE SOLVED MENTALLY.** Make no calculations with paper and pencil. Write only the answer in the space provided at the end of each problem. Problems marked with a (\*) require approximate integral answers; any answer to a starred problem that is within five percent of the exact answer will be scored correct; all other problems require exact answers.

The person conducting this contest should explain these directions to the contestants.  
**Stop – Wait for Signal!**

- |   |  |
|---|--|
| <p>(1) <math>21 + 20 =</math> _____</p> <p>(2) <math>11 \times 13 =</math> _____</p> <p>(3) <math>200 \div 40 =</math> _____</p> <p>(4) <math>12 + 13 + 14 =</math> _____</p> <p>(5) <math>69 - 21 =</math> _____</p> <p>(6) <math>25 \times 21 =</math> _____</p> <p>(7) <math>49 - 12 - 13 =</math> _____</p> <p>(8) <math>461 - 208 =</math> _____</p> <p>(9) <math>21 \times 5 \times 2 =</math> _____</p> <p>* (10) <math>199 + 2021 + 3499 =</math> _____</p> <p>(11) 73082.92361 rounded to the thousandths place is _____ (decimal)</p> <p>(12) <math>19 \times 21 =</math> _____</p> <p>(13) Which digit is in the ten-thousandths place in 12340.56789? _____</p> <p>(14) <math>21 \times 101 =</math> _____</p> <p>(15) What is the remainder for <math>2918 \div 4</math>? _____</p> <p>(16) There are _____ whole numbers between 8 and 21.</p> <p>(17) <math>4 \times 10^3 + 6 \times 10^2 + 8 \times 10^{-2} =</math> _____ (decimal)</p> <p>(18) <math>16 \times 5 + 4 \times 5 =</math> _____</p> <p>(19) DLX = _____ (Arabic Numeral)</p> | <p>* (20) <math>2021 \times 19 + 2021 =</math> _____</p> <p>(21) <math>2021 + 1202 =</math> _____</p> <p>(22) <math>24 - 8 \div 2 =</math> _____</p> <p>(23) <math>1 \frac{1}{2}</math> years = _____ months</p> <p>(24) <math>2 \frac{1}{2} \% =</math> _____ decimal</p> <p>(25) <math>\frac{19}{20} - \frac{7}{20} =</math> _____</p> <p>(26) <math>102 \times 103 =</math> _____</p> <p>(27) 0.45 = _____ common fraction</p> <p>(28) If 12 ♣ costs 80¢ then 96 ♣ cost \$ _____</p> <p>(29) <math>55 \times 75 =</math> _____</p> <p>* (30) <math>333 \times 2397 =</math> _____</p> <p>(31) <math>8989 \div 101 =</math> _____</p> <p>(32) The largest prime number less than 50 is _____</p> <p>(33) Which is smaller: <math>\frac{8}{15}</math> or <math>\frac{4}{7}</math>? _____</p> <p>(34) <math>\frac{9}{100} \div \frac{3}{100} =</math> _____</p> <p>(35) 72 inches = _____ yards</p> <p>(36) The GCD of 18 and 24 is _____</p> <p>(37) <math>15 + 18 + 21 + 24 =</math> _____</p> |
|---|--|

- (38)  $62.5\% =$  \_\_\_\_\_ common fraction
- (39) The LCM of 12 and 8 is \_\_\_\_\_
- \*(40)  $333\frac{1}{3}\%$  of 6598 = \_\_\_\_\_
- (41)  $18^2 =$  \_\_\_\_\_
- (42)  $6^3 =$  \_\_\_\_\_
- (43) The volume of a rectangular box with sides 8, 12 and 10 centimeters is \_\_\_\_\_  $\text{cm}^3$
- (44) The area of a rectangle with sides 15 m and 20 m is \_\_\_\_\_  $\text{m}^2$
- (45) If  $x - 14 = 36$ , then  $x =$  \_\_\_\_\_
- (46)  $\frac{9}{10} \times \frac{2}{3} =$  \_\_\_\_\_
- (47)  $5\frac{1}{3} \times 4\frac{1}{3} =$  \_\_\_\_\_ (mixed number)
- (48)  $75 \times 16 =$  \_\_\_\_\_
- (49) If  $x = 12$ , then  $5 + 3x =$  \_\_\_\_\_
- \*(50)  $15^4 =$  \_\_\_\_\_
- (51) What is the number,  $k$ , in the sequence:  
1, 4, 9, 16,  $k$ , 36, 49, ...? \_\_\_\_\_
- (52) What is the diameter of a circle with a circumference equal to  $4\pi$ ? \_\_\_\_\_
- (53) What is the perimeter of a right triangle with legs 3 in. and 4 in.? \_\_\_\_\_ inches
- (54)  $28 \times 22 =$  \_\_\_\_\_
- (55) What whole number squared and added to eight equals thirty-three? \_\_\_\_\_
- (56) A triangle with perimeter 48 has sides that are 12, 16 and  $x$ . What is  $x$ ? \_\_\_\_\_
- (57) If set  $\mathbf{A} = \{\text{W, E, S, L, A, C, O}\}$  and set  $\mathbf{B} = \{\text{L, O, S, E, B, A, N, O, S}\}$ , then the number of elements in  $\mathbf{A} \cap \mathbf{B}$  is \_\_\_\_\_
- (58) How many elements are in the power set of  $\{0, 1, 2, 3, 4\}$ ? \_\_\_\_\_
- (59) What is the perimeter of the equilateral triangle with side length of  $8\frac{1}{3}$ ? \_\_\_\_\_
- \*(60) 135 days = \_\_\_\_\_ hours
- (61) 20 (base 10) = \_\_\_\_\_ (base 4)
- (62)  $12 + 2^4 \div 4 =$  \_\_\_\_\_
- (63) The area of a square with side 25 is \_\_\_\_\_
- (64)  $53^2 =$  \_\_\_\_\_
- (65) A black bag contains 8 black, 6 green and 4 red marbles. The probability of blindly picking a red marble is \_\_\_\_\_
- (66) What is the cost of 5 pounds of meat that cost \$7.99 per pound? \$ \_\_\_\_\_
- (67) The sum of the interior angles for a quadrilateral is \_\_\_\_\_ degrees
- (68) If  $x - 3 < 8$ , then  $x <$  \_\_\_\_\_
- (69)  $\frac{5}{3} + \frac{3}{5} =$  \_\_\_\_\_ (mixed number)
- \*(70)  $444 \times 809 + 4 =$  \_\_\_\_\_
- (71) 18 quarts = \_\_\_\_\_ gallons
- (72) What is the area of a rhombus with diagonal lengths of 12 and 15? \_\_\_\_\_
- (73) If 14% of  $x$  is 28% of 6, then  $x =$  \_\_\_\_\_
- (74)  $(-18) \div 2 + 17 =$  \_\_\_\_\_
- (75)  $375 \times 40 =$  \_\_\_\_\_
- (76)  $16^2 - 14^2 =$  \_\_\_\_\_
- (77) What is the distance between -9 and 12 on the number line? \_\_\_\_\_
- (78)  $111 \times 234 =$  \_\_\_\_\_
- (79) The area of a square with diagonal 16 is \_\_\_\_\_
- \*(80)  $\sqrt{116281} =$  \_\_\_\_\_

## 2020 – 2021 University Interscholastic League Elementary Number Sense Test A – Key

(1) 41	*(20) 38399 – 42441	(38) $\frac{5}{8}$	(59) 25
(2) 143	(21) 3223	(39) 24	*(60) 3078 – 3402
(3) 5	(22) 20	*(40) 20894 – 23093	(61) 110
(4) 39	(23) 18	(41) 324	(62) 16
(5) 48	(24) .025	(42) 216	(63) 625
(6) 525	(25) $\frac{3}{5}; .6$	(43) 960	(64) 2809
(7) 24	(26) 10506	(44) 300	(65) $\frac{2}{9}$
(8) 253	(27) $\frac{9}{20}$	(45) 50	(66) 39.95
(9) 210	(28) 6.40	(46) $\frac{3}{5}; .6$	(67) 360
*(10) 5434 – 6004	(29) 4125	(47) $23\frac{1}{9}$	(68) 11
(11) 73082.924	*(30) 758291 – 838111	(48) 1200	(69) $2\frac{4}{15}$
(12) 399	(31) 89	(49) 41	*(70) 341240 – 377160
(13) 8	(32) 47	*(50) 48094 – 53156	(71) $4.5; 4\frac{1}{2}; \frac{9}{2}$
(14) 2121	(33) $\frac{8}{15}$	(51) 25	(72) 90
(15) 2	(34) 3	(52) 4	(73) 12
(16) 12	(35) 2	(53) 12	(74) 8
(17) 4600.08	(36) 6	(54) 616	(75) 15000
(18) 100	(37) 78	(55) 5	(76) 60
(19) 560		(56) 20	(77) 21
		(57) 5	(78) 25974
		(58) 32	(79) 128
			*(80) 324 – 358

Note: \*(Number) x – y means an integer between x and y inclusive.

If an answer is of the type like  $\frac{2}{3}$  it cannot be written as .666... or  $\overline{.6}$ .

**University Interscholastic League  
2020 – 2021 Elementary Number Sense Test B**

Contestant's Number \_\_\_\_\_

Final		
2 <sup>nd</sup>		
1 <sup>st</sup>		
<b>Score</b>	<b>Initials</b>	

**Read Directions Carefully  
Before Beginning Test**

**Do Not Unfold This Sheet  
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The person conducting this contest should explain these directions to the contestants.

**Stop – Wait for Signal!**

- |  |  |
|--|--|
| <p>(1) <math>112 + 201 =</math> _____</p> <p>(2) <math>220 \div 5 =</math> _____</p> <p>(3) <math>23 \times 11 =</math> _____</p> <p>(4) <math>375 - 204 =</math> _____</p> <p>(5) <math>16 + 15 + 14 =</math> _____</p> <p>(6) <math>65 - 14 - 21 =</math> _____</p> <p>(7) <math>32 \times 25 =</math> _____</p> <p>(8) <math>415 - 238 =</math> _____</p> <p>(9) <math>6 \times 32 \times 5 =</math> _____</p> <p>*(10) <math>201 \times 333 + 67 =</math> _____</p> <p>(11) 51287.29301 rounded to the hundreds place is<br/>_____</p> <p>(12) <math>18 \times 22 =</math> _____</p> <p>(13) Which digit is in the ten-thousands place in<br/>12340.56789? _____</p> <p>(14) <math>101 \times 83 =</math> _____</p> <p>(15) What is the remainder for <math>2074 \div 9</math>? _____</p> <p>(16) How many odd whole numbers are between<br/>5 and 32? _____</p> <p>(17) <math>5 \times 10^3 + 6 \times 10^1 + 4 \times 10^{-1} =</math> _____ (decimal)</p> <p>(18) <math>19 \times 3 + 3 \times 4 =</math> _____</p> | <p>(19) MMXX = _____ (Arabic Numeral)</p> <p>*(20) <math>449 \times 1109 =</math> _____</p> <p>(21) <math>1234 + 4321 =</math> _____</p> <p>(22) <math>18 + 12 \div 3 =</math> _____</p> <p>(23) 15 weeks = _____ days</p> <p>(24) <math>3\frac{1}{4}\% =</math> _____ decimal</p> <p>(25) <math>\frac{7}{36} + \frac{11}{36} =</math> _____</p> <p>(26) <math>94 \times 98 =</math> _____</p> <p>(27) 0.84 = _____ common fraction</p> <p>(28) If 24 ♣ costs 88¢ then 96 ♣ cost \$ _____</p> <p>(29) <math>68 \times 62 =</math> _____</p> <p>*(30) <math>1249 \times 319 =</math> _____</p> <p>(31) <math>925 \div 25 =</math> _____</p> <p>(32) The smallest prime number greater than 80 is _____</p> <p>(33) Which is larger: <math>\frac{11}{12}</math> or <math>\frac{8}{9}</math>? _____</p> <p>(34) <math>\frac{21}{100} \div \frac{63}{100} =</math> _____</p> <p>(35) 120 feet = _____ yards</p> <p>(36) The LCM of 21 and 14 is _____</p> <p>(37) <math>19 + 17 + 15 + 13 =</math> _____</p> |
|--|--|

- (38)  $37.5\% =$  \_\_\_\_\_ common fraction
- (39) The GCF of 20 and 36 is \_\_\_\_\_
- \*(40)  $444\frac{4}{9}\%$  of 1790 = \_\_\_\_\_
- (41)  $22^2 =$  \_\_\_\_\_
- (42)  $8^3 =$  \_\_\_\_\_
- (43) The volume of a rectangular box with sides 6, 8 and 15 centimeters is \_\_\_\_\_  $\text{cm}^3$
- (44) The area of a rectangle with sides 25 m and 32 m is \_\_\_\_\_  $\text{m}^2$
- (45) If  $x + 23 = 44$ , then  $x =$  \_\_\_\_\_
- (46)  $\frac{5}{12} \times \frac{8}{15} =$  \_\_\_\_\_
- (47)  $8\frac{2}{3} \times 8\frac{1}{3} =$  \_\_\_\_\_ (mixed number)
- (48)  $36 \times 75 =$  \_\_\_\_\_
- (49) If  $x = 12$ , then  $45 - 3x =$  \_\_\_\_\_
- \*(50)  $18^4 =$  \_\_\_\_\_
- (51) What is the number,  $k$ , in the sequence:  
1, 8, 27,  $k$ , 125, 216, ... ? \_\_\_\_\_
- (52) What is the diameter of a circle with an area equal to  $49\pi$ ? \_\_\_\_\_
- (53) What is the perimeter of a right triangle with legs 12 in. and 16 in.? \_\_\_\_\_ inches
- (54)  $45 \times 85 =$  \_\_\_\_\_
- (55) What whole number squared minus eighteen is equal to thirty-one? \_\_\_\_\_
- (56) A rectangle with perimeter 48 has sides that are 8 and  $x$ . What is  $x$ ? \_\_\_\_\_
- (57) If set  $\mathbf{A} = \{\mathbf{A}, \mathbf{B}, \mathbf{I}, \mathbf{L}, \mathbf{E}, \mathbf{N}, \mathbf{E}\}$  and set  $\mathbf{B} = \{\mathbf{G}, \mathbf{R}, \mathbf{E}, \mathbf{E}, \mathbf{N}, \mathbf{W}, \mathbf{O}, \mathbf{O}, \mathbf{D}\}$ , then the number of elements in  $\mathbf{A} \cup \mathbf{B}$  is \_\_\_\_\_
- (58) How many elements are in the power set of  $\{-1, \mathbf{A}, 2, \mathbf{B}\}$ ? \_\_\_\_\_
- (59) What is the perimeter of the regular pentagon with side length of  $6\frac{3}{5}$ ? \_\_\_\_\_
- \*(60) 12 miles = \_\_\_\_\_ feet
- (61) 312 (base 4) = \_\_\_\_\_ (base 10)
- (62)  $32 + 3^2 \div 9 - 1 =$  \_\_\_\_\_
- (63) The perimeter of a square with side 2.5 is \_\_\_\_\_
- (64)  $46^2 =$  \_\_\_\_\_
- (65) A black bag contains 10 black, 16 green and 24 red marbles. The probability of blindly picking a green marble is \_\_\_\_\_
- (66) What is the cost of 8 pounds of meat that cost \$6.99 per pound? \$ \_\_\_\_\_
- (67) The sum of the interior angles for a hexagon is \_\_\_\_\_ degrees
- (68) If  $x + 3 > 21$ , then  $x >$  \_\_\_\_\_
- (69)  $\frac{4}{7} + \frac{7}{4} =$  \_\_\_\_\_ (mixed number)
- \*(70)  $6249 \times 159 + 9 =$  \_\_\_\_\_
- (71) 48 ounces = \_\_\_\_\_ quarts
- (72) What is the area of a rhombus with diagonal lengths of 25 and 18? \_\_\_\_\_
- (73) If 16% of  $x$  is 8% of 14, then  $x =$  \_\_\_\_\_
- (74)  $(-28) \div (-2) - 17 =$  \_\_\_\_\_
- (75)  $625 \times 80 =$  \_\_\_\_\_
- (76)  $13^2 + 39^2 =$  \_\_\_\_\_
- (77) What is the distance between -17 and 17 on the number line? \_\_\_\_\_
- (78)  $678 \times 111 =$  \_\_\_\_\_
- (79) The area of a square with diagonal 12 is \_\_\_\_\_
- \*(80)  $\sqrt{166464} =$  \_\_\_\_\_



## 2020 – 2021 University Interscholastic League Elementary Number Sense Test B – Key

(1) 313	(19) 2020	(38) $\frac{3}{8}$	(59) 33
(2) 44	*(20) 473044 – 522838	(39) 4	*(60) 60192 – 66528
(3) 253	(21) 5555	*(40) 7558 – 8353	(61) 54
(4) 171	(22) 22	(41) 484	(62) 32
(5) 45	(23) 105	(42) 512	(63) 10
(6) 30	(24) .0325	(43) 720	(64) 2116
(7) 800	(25) $\frac{1}{2}$ ; .5	(44) 800	(65) $\frac{8}{25}$ ; .32
(8) 177	(26) 9212	(45) 21	(66) 55.92
(9) 960	(27) $\frac{21}{25}$	(46) $\frac{2}{9}$	(67) 720
*(10) 63650 – 70350	(28) 3.52	(47) $72\frac{2}{9}$	(68) 18
(11) 51300	(29) 4216	(48) 2700	(69) $2\frac{9}{28}$
(12) 396	*(30) 378510 – 418352	(49) 9	*(70) 943920 – 1043280
(13) 1	(31) 37	*(50) 99728 – 110224	(71) $1.5; 1\frac{1}{2}; \frac{3}{2}$
(14) 8383	(32) 83	(51) 64	(72) 225
(15) 4	(33) $\frac{11}{12}$	(52) 14	(73) 7
(16) 13	(34) $\frac{1}{3}$	(53) 48	(74) -3
(17) 5060.4	(35) 40	(54) 3825	(75) 50000
(18) 69	(36) 42	(55) 7	(76) 1690
	(37) 64	(56) 16	(77) 34
		(57) 11	(78) 75258
		(58) 16	(79) 72
			*(80) 388 – 428

Note: \*(Number) x – y means an integer between x and y inclusive.

If an answer is of the type like  $\frac{2}{3}$  it cannot be written as .666... or  $\overline{.6}$ .

**University Interscholastic League  
2020 – 2021 Elementary Number Sense Test C**

Contestant's Number \_\_\_\_\_

Final		
2 <sup>nd</sup>		
1 <sup>st</sup>		
<b>Score</b>	<b>Initials</b>	

**Read Directions Carefully  
Before Beginning Test**

**Do Not Unfold This Sheet  
Until Told to Begin**

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The person conducting this contest should explain these directions to the contestants.  
**Stop – Wait for Signal!**

- |  |   |
|--|---|
| <p>(1) <math>220 + 211 =</math> _____</p> <p>(2) <math>220 \div 4 =</math> _____</p> <p>(3) <math>53 \times 11 =</math> _____</p> <p>(4) <math>615 - 414 =</math> _____</p> <p>(5) <math>11 + 12 + 13 =</math> _____</p> <p>(6) <math>40 - 18 - 12 =</math> _____</p> <p>(7) <math>51 \times 25 =</math> _____</p> <p>(8) <math>503 - 317 =</math> _____</p> <p>(9) <math>5 \times 27 \times 6 =</math> _____</p> <p>*(10) <math>210 \times 667 + 30 =</math> _____</p> <p>(11) 51287.29301 rounded to the tens place is<br/>_____</p> <p>(12) <math>29 \times 31 =</math> _____</p> <p>(13) Which digit is in the hundred-thousandths place in 12340.56789? _____</p> <p>(14) <math>101 \times 43 =</math> _____</p> <p>(15) What is the remainder for <math>2174 \div 9</math>? _____</p> <p>(16) How many odd whole numbers are between 5 and 28? _____</p> <p>(17) <math>7 \times 10^3 + 4 \times 10^1 + 1 \times 10^{-1} =</math> _____ (decimal)</p> <p>(18) <math>18 \times 5 + 5 \times 4 =</math> _____</p> | <p>(19) MMXXI = _____ (Arabic Numeral)</p> <p>*(20) <math>269 \times 1109 =</math> _____</p> <p>(21) <math>2345 + 5432 =</math> _____</p> <p>(22) <math>15 + 12 \div 3 =</math> _____</p> <p>(23) 14 weeks = _____ days</p> <p>(24) <math>4\frac{3}{4}\%</math> = _____ decimal</p> <p>(25) <math>\frac{11}{36} + \frac{13}{36} =</math> _____</p> <p>(26) <math>96 \times 97 =</math> _____</p> <p>(27) 0.72 = _____ common fraction</p> <p>(28) If 18 ♣ costs 88¢ then 54 ♣ cost \$ _____</p> <p>(29) <math>88 \times 82 =</math> _____</p> <p>*(30) <math>1249 \times 479 =</math> _____</p> <p>(31) <math>875 \div 25 =</math> _____</p> <p>(32) The smallest prime number greater than 50 is _____</p> <p>(33) Which is larger: <math>\frac{5}{12}</math> or <math>\frac{3}{7}</math>? _____</p> <p>(34) <math>\frac{27}{100} \div \frac{63}{100} =</math> _____</p> <p>(35) 111 feet = _____ yards</p> <p>(36) The LCM of 18 and 27 is _____</p> <p>(37) <math>21 + 19 + 17 + 15 =</math> _____</p> |
|--|---|

- (38)  $87.5\% =$  \_\_\_\_\_ common fraction
- (39) The GCF of 24 and 36 is \_\_\_\_\_
- \*(40)  $444\frac{4}{9}\%$  of 2690 = \_\_\_\_\_
- (41)  $23^2 =$  \_\_\_\_\_
- (42)  $7^3 =$  \_\_\_\_\_
- (43) The volume of a rectangular box with sides 8, 3 and 12 centimeters is \_\_\_\_\_  $\text{cm}^3$
- (44) The area of a rectangle with sides 25 m and 24 m is \_\_\_\_\_  $\text{m}^2$
- (45) If  $x + 33 = 44$ , then  $x =$  \_\_\_\_\_
- (46)  $\frac{5}{16} \times \frac{4}{15} =$  \_\_\_\_\_
- (47)  $5\frac{2}{3} \times 5\frac{1}{3} =$  \_\_\_\_\_ (mixed number)
- (48)  $48 \times 75 =$  \_\_\_\_\_
- (49) If  $x = 5$ , then  $27 - 3x =$  \_\_\_\_\_
- \*(50)  $16^4 =$  \_\_\_\_\_
- (51) What is the number,  $k$ , in the sequence:  
1, 4, 9,  $k$ , 25, 36 . . . ? \_\_\_\_\_
- (52) What is the diameter of a circle with an area equal to  $25\pi$ ? \_\_\_\_\_
- (53) What is the perimeter of a right triangle with legs 9 in. and 12 in.? \_\_\_\_\_ inches
- (54)  $55 \times 85 =$  \_\_\_\_\_
- (55) What whole number squared minus eighteen is equal to forty-six? \_\_\_\_\_
- (56) A rectangle with perimeter 32 has sides that are 12 and  $x$ . What is  $x$ ? \_\_\_\_\_
- (57) If set  $A = \{L, O, N, G, V, I, E, W\}$  and set  $B = \{P, I, N, E, T, R, E, E\}$ , then the number of elements in  $A \cup B$  is \_\_\_\_\_
- (58) How many elements are in the power set of  $\{-3, Z, 2\}$ ? \_\_\_\_\_
- (59) What is the perimeter of the regular pentagon with side length of  $2\frac{4}{5}$ ? \_\_\_\_\_
- \*(60) 11 miles = \_\_\_\_\_ feet
- (61) 321 (base 4) = \_\_\_\_\_ (base 10)
- (62)  $16 + 2^4 \div 4 - 2 =$  \_\_\_\_\_
- (63) The perimeter of a square with side 3.5 is \_\_\_\_\_
- (64)  $42^2 =$  \_\_\_\_\_
- (65) A black bag contains 10 black, 16 green and 24 red marbles. The probability of blindly picking a red marble is \_\_\_\_\_
- (66) What is the cost of 9 pounds of meat that cost \$6.99 per pound? \$ \_\_\_\_\_
- (67) The sum of the interior angles for a pentagon is \_\_\_\_\_ degrees
- (68) If  $x + 14 > 21$ , then  $x >$  \_\_\_\_\_
- (69)  $\frac{5}{6} + \frac{6}{5} =$  \_\_\_\_\_ (mixed number)
- \*(70)  $624 \times 321 - 4 =$  \_\_\_\_\_
- (71) 40 ounces = \_\_\_\_\_ quarts
- (72) What is the area of a rhombus with diagonal lengths of 25 and 26? \_\_\_\_\_
- (73) If 16% of  $x$  is 8% of 18, then  $x =$  \_\_\_\_\_
- (74)  $(-28) \div (-4) - 7 =$  \_\_\_\_\_
- (75)  $625 \times 40 =$  \_\_\_\_\_
- (76)  $11^2 + 33^2 =$  \_\_\_\_\_
- (77) What is the distance between -14 and 14 on the number line? \_\_\_\_\_
- (78)  $759 \times 111 =$  \_\_\_\_\_
- (79) The area of a square with diagonal 18 is \_\_\_\_\_
- \*(80)  $\sqrt{164025} =$  \_\_\_\_\_

## 2020 – 2021 University Interscholastic League Elementary Number Sense Test C – Key

(1) 431	(19) 2021	(38) $\frac{7}{8}$	(59) 14
(2) 55	*(20) 283405 – 313237	(39) 12	*(60) 55176 – 60984
(3) 583	(21) 7777	*(40) 11358 – 12553	(61) 57
(4) 201	(22) 19	(41) 529	(62) 18
(5) 36	(23) 98	(42) 343	(63) 14
(6) 10	(24) .0475	(43) 288	(64) 1764
(7) 1275	(25) $\frac{2}{3}$	(44) 600	(65) $\frac{12}{25}$ ; .48
(8) 186	(26) 9312	(45) 11	(66) 62.91
(9) 810	(27) $\frac{18}{25}$	(46) $\frac{1}{12}$	(67) 540
*(10) 133095 – 147105	(28) 2.64	(47) $30\frac{2}{9}$	(68) 7
(11) 51290	(29) 7216	(48) 3600	(69) $2\frac{1}{30}$
(12) 899	*(30) 568358 – 628184	(49) 12	*(70) 190285 – 210315
(13) 9	(31) 35	*(50) 62260 – 68812	(71) 1.25; $1\frac{1}{4}$ ; $\frac{5}{4}$
(14) 4343	(32) 53	(51) 16	(72) 325
(15) 5	(33) $\frac{3}{7}$	(52) 10	(73) 9
(16) 11	(34) $\frac{3}{7}$	(53) 36	(74) 0
(17) 7040.1	(35) 37	(54) 4675	(75) 25000
(18) 110	(36) 54	(55) 8	(76) 1210
	(37) 72	(56) 4	(77) 28
		(57) 11	(78) 84249
		(58) 8	(79) 162
			*(80) 385 – 425

Note: \*(Number) x – y means an integer between x and y inclusive.

If an answer is of the type like  $\frac{2}{3}$  it cannot be written as .666... or  $\overline{.6}$ .

Contestant Number \_\_\_\_\_

Contestant Name \_\_\_\_\_

(to be filled in after judging)

## UIL A+ Ready Writing Evaluation Sheet: Elementary, Middle School, and Junior High

Evaluation criteria are listed in the order of importance. Write the number that indicates the quality in each of the sub-areas and tally the points.

(50%) \_\_\_\_\_/100

**INTEREST:** Writing exhibits originality of thought, analytical acuteness and overall coherence of exposition.

	<u>POOR</u>	<u>FAIR</u>	<u>GOOD</u>	<u>EXCELLENT</u>
Perceptive ideas	_____/7	_____/13	_____/19	_____/25
Originality	_____/7	_____/13	_____/19	_____/25
Examples	_____/7	_____/13	_____/19	_____/25
Title	_____/7	_____/13	_____/19	_____/25

(35%) \_\_\_\_\_/70

**ORGANIZATION:** Each paragraph develops a clear idea or ideas and contributes to an understanding of the prompt.

	<u>POOR</u>	<u>FAIR</u>	<u>GOOD</u>	<u>EXCELLENT</u>
Student answers prompt consistently <i>(either through supporting details, thesis, and/or plot points and character development)</i>	_____/3	_____/7	_____/11	_____/14
Well-developed paragraphs, focused on an idea or ideas	_____/3	_____/7	_____/11	_____/14
Transition	_____/3	_____/7	_____/11	_____/14
Support for student's response to prompt	_____/3	_____/7	_____/11	_____/14
Composition clarity (as a whole)	_____/3	_____/7	_____/11	_____/14

(15%) \_\_\_\_\_/30

**CORRECTNESS OF STYLE:** Writing avoids errors in sentence structure, punctuation, grammar, word usage and spelling that hinder clear communication.

	<u>POOR</u>	<u>FAIR</u>	<u>GOOD</u>	<u>EXCELLENT</u>
Punctuation	_____/1	_____/3	_____/5	_____/6
Sentence structure	_____/1	_____/3	_____/5	_____/6
Grammar	_____/1	_____/3	_____/5	_____/6
Word Usage	_____/1	_____/3	_____/5	_____/6
Spelling	_____/1	_____/3	_____/5	_____/6

**TOTAL SCORE:** \_\_\_\_\_/200

### CONSTRUCTIVE COMMENTS FOR THE CONTESTANT:

Please read "Instructions for the Judges" for Ready Writing before evaluating contestants' papers. While judges are to consider all three elements in selecting the most effective compositions, they should weigh interest more than organization, and organization more than correctness of style.

### AREAS NEEDING IMPROVEMENT:

Judge's signature \_\_\_\_\_



# **A+ Ready Writing**

## **for Elementary, Middle School, and Junior High**

### **Instructions for the Judges**

#### **Instructions**

At some convenient time before the contest begins, the director shall discuss with the judges the criteria for evaluating the stories, making sure that they all have the same conception of those criteria and understand the relative importance to be accorded each. Each judge shall be given a copy of the evaluation sheet provided by the UIL. Judges should also read the Ready Writing topic sheets the contestants were given.

#### **Criteria**

The essays are to be evaluated as to relative excellence in interest (50%), organization (35%), and correctness of style (15%). Please make comments constructive and supportive. While judges are to consider all three elements in selecting the most effective stories, more weight should be given to interest than to organization, and to organization more than to correctness of style.

- (A) Interest depends primarily on perceptive ideas. It depends next upon originality and including specific examples, which individualize the story as an outgrowth of the writer's voice. The effectiveness of the title is also considered.
- (B) A well-organized paper or story will present a clear response to the prompt with well-developed, focused paragraphs. For expository prompts, the student could incorporate a thesis statement. For narrative prompts, the student could incorporate plot points and/or character development. The use of transitions will also be examined as well as the effectiveness of support for the student's response to the prompt. As a whole, the composition should be considered for clarity.
- (C) Grammatical correctness of style includes an examination of punctuation, sentence structure, grammar, word usage, and spelling.

#### **Completing Evaluation Sheets**

Before the results are announced, the judges shall prepare a written evaluation of each essay stating its good points and areas that could be improved. Comments need not be long, but they should be specific rather than general.

There are points assigned to each of the subcategories within the three main criteria, which will all add up to 200. An essay that scores the highest might not necessarily mean it will be 1<sup>st</sup> place. Rather, the tool can help inform a judge of the essay strengths, and then a discussion with other judges, and/or with a reevaluation of the essay, the determination of actual places can be made.

It can be confusing for a student to score higher than others and then not be the top rank, so you might consider aligning the scores to the ranks when possible to avoid that confusion.

#### **Rating the compositions**

Judges should read the essays submitted and without marking on the essays, rank the essays in order of excellence: 1, 2, 3, 4, etc. Comments should be made on the evaluation sheets provided. The judges shall discuss the essays contending for a place, being permitted to alter their rankings as a result of the discussion. Judges are to reach a consensus on the rankings. There can be no ties in this contest.



## 2020-21 A+ Ready Writing

### INVITATIONAL

#### INSTRUCTIONS

Choose **one** of the following topics. Write the topic you have chosen at the top of your paper. **You should also include an original, creative title for your paper.** Remember you should not use your real name or that of your school.

#### THIRD AND FOURTH GRADES

**Topic:** *Traveling Through Time*

Imagine you owned a time traveler machine. Create a story explaining where you would go and what you would do when you arrived.

**Topic:** *Type of Person*

Think about your daily schedule. Are you a morning, afternoon, or evening person? Write an essay explaining the type of person you are and include specific reasons to support your response.



# 2020-21 A+ Ready Writing

## INVITATIONAL

### INSTRUCTIONS

Choose **one** of the following topics. Write the topic you have chosen at the top of your paper. **You should also include an original, creative title for your paper.** Remember you should not use your real name or that of your school.

### FIFTH AND SIXTH GRADES

**Topic:** *My Value*

Think about all of the values that are important to you. Then, choose the value that is most important. Write an essay explaining the value and why it is so important to you.

**Topic:** *Celebrity Hang Out*

Imagine your favorite celebrity wanted to hang out with you for a day. Write a story explaining who the celebrity is and how you enjoyed your day.





## 2020-21 A+ Ready Writing

### FALL/WINTER DISTRICT

#### INSTRUCTIONS

Choose **one** of the following topics. Write the topic you have chosen at the top of your paper. **You should also include an original, creative title for your paper.** Remember you should not use your real name or that of your school.

#### THIRD AND FOURTH GRADES

**Topic:** *Standing Up for a Belief*

Think about a time when you stood up for something you believed in. Write an essay explaining the situation and how your belief influenced your decision to do something.

**Topic:** *Something New*

Pretend you have a friend who is afraid to try anything new. Write a letter to that friend encouraging him or her to face that fear. Remember you should not use your real name or that of your school.



# 2020-21 A+ Ready Writing

## FALL/WINTER DISTRICT

### INSTRUCTIONS

Choose **one** of the following topics. Write the topic you have chosen at the top of your paper. **You should also include an original, creative title for your paper.** Remember you should not use your real name or that of your school.

### FIFTH AND SIXTH GRADES

**Topic:** *Stairs to Success*

Someone once said, "There is no elevator to success. You have to take the stairs." Think about what this quote means and write an essay explaining your thoughts.

**Topic:** *Classroom or Online*

In your opinion, is it easier to learn online or in the classroom? Write an essay explaining your opinion with specific reasons.



# 2020-21 A+ Ready Writing

## SPRING DISTRICT

### INSTRUCTIONS

Choose **one** of the following topics. Write the topic you have chosen at the top of your paper. **You should also include an original, creative title for your paper.** Remember you should not use your real name or that of your school.

### THIRD AND FOURTH GRADES

**Topic:** *Positive Mistake*

Mistakes are proof that you are trying. Think about a mistake you have made. Write an essay explaining how the mistake impacted you in a positive way.

**Topic:** *Trading Places*

Imagine you could change places with anyone for a day. Write a story explaining who you would trade places with. Be as creative as you would like.



# 2020-21 A+ Ready Writing

## SPRING DISTRICT

### INSTRUCTIONS

Choose **one** of the following topics. Write the topic you have chosen at the top of your paper. **You should also include an original, creative title for your paper.** Remember you should not use your real name or that of your school.

### FIFTH AND SIXTH GRADES

**Topic:** *Not a Perfect Day*

Write a creative story with the sentence, "It seemed like a perfect day, until..." Be as creative as you would like.

**Topic:** *Overcoming a Challenge*

Think about a major challenge you or someone you know has overcome. Write an essay explaining the challenge and how it was conquered.

## UIL A+ Science Update

Starting in the 2021-22 school year, Science has moved to one test for students in grades 6-8.

The following tests are from last year when the test was split into Science I and Science II.

The new Science test will include similar types of questions and will cover current state-adopted curriculum and textbooks with approximately 15 questions for each grade level (6, 7, and 8) and five wild card or general questions on the test.

Below are sample questions and a key for the updated Science event.

### 2021-2022 A+ SCIENCE SAMPLE QUESTIONS

1. Within any group of elements on the periodic table the metallic character tends to do which of the following from bottom to top in the group?  
A. Increase                                      B. Decrease                                      C. Remains constant
2. A tennis ball is dropped from a step stool one meter high. At which position does the tennis ball have the greatest potential energy and least kinetic energy?  
A. At 0 meter high                                      C. At .5 meter high  
B. At .25 meter high                                      D. At .75 meter high
3. A car travels 35 kilometers in 30 minutes. What is the average speed of this car?  
A. .86 km/hr  
B. 1.17 km/hr  
C. 70 km/hr  
D. 700 km/hr
4. A class was studying human body systems. Composed of a number of small organs distributed throughout the body, this system coordinates the metabolic activity of body cells by interacting with the nervous system. The class was studying which of the following systems?  
A. Endocrine system                                      C. Circulatory system  
B. Immune system                                      D. Muscular system
5. According to cell theory, what do each of the following organisms have in common?



- A. They can all reproduce by spontaneous generation.  
B. Each organism is able to photosynthesize.  
C. Cells are the basic unit of structure for each organism.  
D. They are all made up of the same exact atoms.
6. In recent years, there have been numerous agencies planning manned trips to Mars. Why is traveling to Mars so difficult?
- A. Temperatures in space  
B. Distance between planets  
C. No landing runway on Mars  
D. Erratic motion of planets
7. Speed is a scalar type of measurement and velocity is a vector type measurement. What is the main difference between scalar and vector measurements?
- A. Scalar measurements include a direction  
A. Vector measurements include a direction  
B. Neither scalar nor vector measurements include a direction  
C. Both scalar and vector measurements include a direction
8. A force acts on a soccer ball for four seconds causing it to accelerate. If the ball is replaced with a similar ball with four times the mass and the same force is applied for the same amount of time, the acceleration of the similar ball will now be –
- A. One fourth the value  
B. One half the value  
C. Twice the value  
D. Four times the value



9. Which of the following best supports the Big Bang Theory?

- A. Various shapes of galaxies
- B. Speed of light
- C. Red & blue shifts of light from stars
- D. The motion of planets in orbit

10. What does this symbol indicate about a substance?

- A. Can cause injury to skin
- B. Can burn easily
- C. Hazardous to the environment
- D. Harmful to inhale



SAMPLE QUESTIONS  
KEY

- 1. B
- 2. D
- 3. C
- 4. A
- 5. C
- 6. A
- 7. B
- 8. A
- 9. C
- 10. B

CONTESTANT NUMBER:

**FOR GRADER USE ONLY**

Score Test Below:

\_\_\_\_\_ Initials \_\_\_\_\_

\_\_\_\_\_ Initials \_\_\_\_\_

**Papers contending to place:**

\_\_\_\_\_ Initials \_\_\_\_\_



**University Interscholastic League  
A+ Science Contest • Answer Sheet**

*Write your contestant number in the upper right corner and circle your grade below.*

**Circle Grade Level:                    6        7        8**

- |             |             |             |
|-------------|-------------|-------------|
| 1. A B C D  | 18. A B C D | 35. A B C D |
| 2. A B C D  | 19. A B C D | 36. A B C D |
| 3. A B C D  | 20. A B C D | 37. A B C D |
| 4. A B C D  | 21. A B C D | 38. A B C D |
| 5. A B C D  | 22. A B C D | 39. A B C D |
| 6. A B C D  | 23. A B C D | 40. A B C D |
| 7. A B C D  | 24. A B C D | 41. A B C D |
| 8. A B C D  | 25. A B C D | 42. A B C D |
| 9. A B C D  | 26. A B C D | 43. A B C D |
| 10. A B C D | 27. A B C D | 44. A B C D |
| 11. A B C D | 28. A B C D | 45. A B C D |
| 12. A B C D | 29. A B C D | 46. A B C D |
| 13. A B C D | 30. A B C D | 47. A B C D |
| 14. A B C D | 31. A B C D | 48. A B C D |
| 15. A B C D | 32. A B C D | 49. A B C D |
| 16. A B C D | 33. A B C D | 50. A B C D |
| 17. A B C D | 34. A B C D |             |

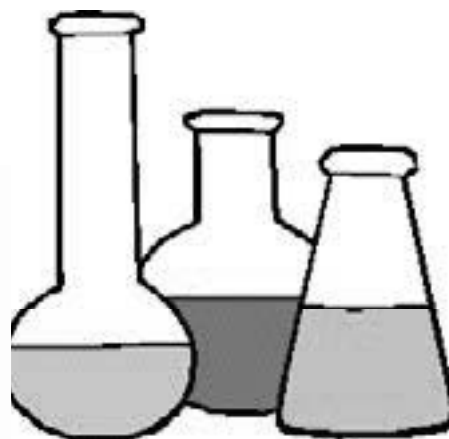
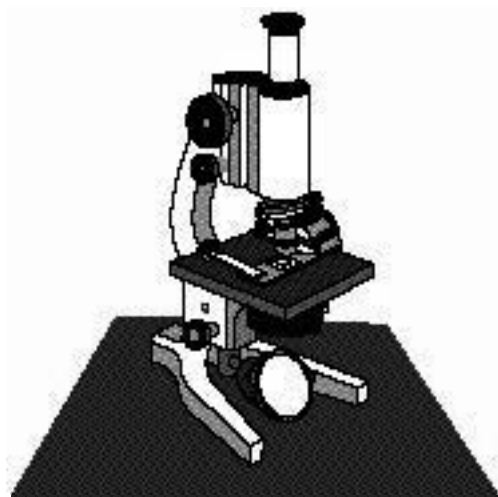


**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League

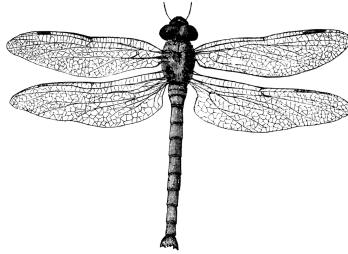


# Science I

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE I  
INVITATIONAL TEST**

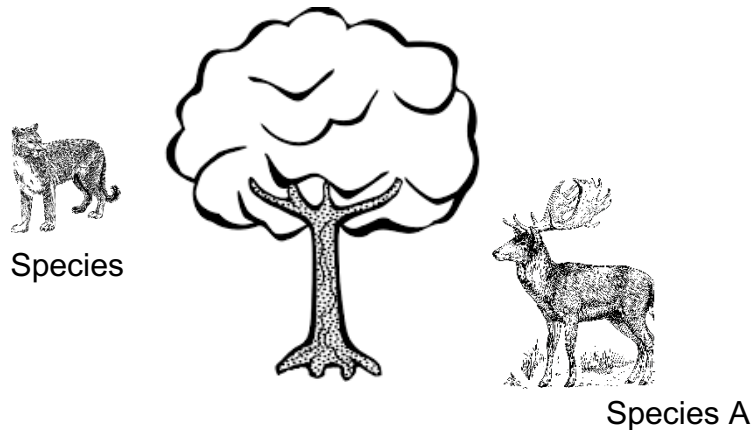
1. Using the following information identify the insect.



1. Does the insect have wings? Remember most adult insects have 2 pairs of wings, but they're not always visible.	a. Yes	go to step 2
	b. No	Order Hemiptera
2. Does the insect have parallel wings?	a. Yes	go to step 3
	b. No	go to step 4
3. Does the insect have a parallel line down the back that divides the wings?	a. Yes	Order Coleoptera
	b. No	Order Orthoptera
4. Does the insect have 4 total wings?	a. Yes	go to step 5
	b. No	Order Diptera
5. Does the insect have long antennae?	a. Yes	go to step 6
	b. No	Order Odonata
6. Does the insect have a small body with large fan-shaped wings?	a. Yes	Order Lepidoptera
	b. No	Order Hymenoptera

- A. Order Hemiptera  
B. Order Coleoptera  
C. Order Diptera  
D. Order Odonata
2. Which of these converts radiant energy to chemical energy?  
A. Flashlight bulb  
B. TV screen  
C. Tree leaf  
D. Campfire

3. In a student led experiment, 4 worms were placed at each end of a compartmented container based on specific temperature ranges. After 10 minutes, all of the worms were congregated in the center compartment. The students concluded that the organisms had moved as far as they could during the time period. Which other explanation is best supported?
- Worms need to be with other worms for warmth
  - Worms moved to the preferred temperature range
  - Worms randomly move until they locate other worms
  - Worms moved until they ran out of energy and remain stationary
- 4.



The illustration shows the relationship of two species living in a grassland biome. What can be concluded about the location of the two species in a food web?

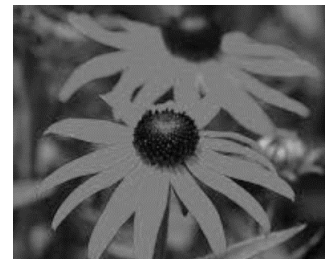
- Species A and B occupy the same level of the food web.
  - Species A is located on a higher level of the food web.
  - It would be inappropriate for species A and B to be placed in the same food web.
  - Species B is located on a higher level of the food web.
5. Which organ is responsible for most of the chemical digestion in the human body?
- mouth
  - stomach
  - small intestine
  - large intestine
6. Reptiles do not have the ability to create their own heat. They must lay in the sun for prolonged periods of time to regulate their body temperature. Mammals have the ability to create their own heat. Where do mammals get the energy for this heat?
- The oxygen they inhale
  - From light the animals absorb
  - From radiation in the body
  - From food the animals eat
7. Researchers on the ISS studying plant growth would probably see that the plants do not grow in the same manner and direction as those on Earth do. Researchers working in space would most likely be studying which of the following effects?
- Friction
  - Gravity
  - Convection currents
  - Humidity

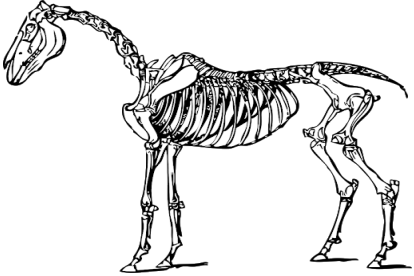
8. A landslide is the movement of rock, earth, or debris down a sloped section of land. Landslides can be caused by rain, earthquakes, or volcanic activity that make the slope unstable. If all of the plants in the valley are buried from a landslide. New plants that begin to grow in the valley after the landslide will mostly likely not have access to which of the following —
- A. Fresh air
  - B. Ample sunlight
  - C. Fertile soil
  - D. Water
9. Over time, erosion can greatly affect a coastal environment. Which of the following is a direct result of erosion on coastal environments?
- A. Coastal land areas increase
  - B. Due to wave action on beaches, rocks are lost
  - C. Competition for resources increases due to lost habitats
  - D. Increase of concrete production
10. A natural spring of water starts a river flowing in Texas. The spring water flows up into an area that is used as a recreational swimming pool, and then flows into a river downstream. A determined amount of water consistently flows out of the spring every day. Which of the following statements is true about the spring and the river?
- A. The water from the spring is ground water that enters the surface water of the river.
  - B. The water from the river and spring are both examples of surface water.
  - C. The water from the river and spring are both examples of ground water.
  - D. The water from the spring and river are considered run-off.
11. Which of the following characteristics essential to the existence of life here on Earth?


- 1. Earth's acceleration due to gravity is  $9.8 \text{ m/s}^2$
- 2. Earth's atmosphere is composed of mostly nitrogen with oxygen and carbon dioxide.
- 3. Almost 99% of the minerals making up the Earth's crust are made up of just eight elements.
- 4. Temperatures range from -25 degrees Celsius to 45 degrees Celsius.
- 5. Earth's magnetic field serves to deflect most of the solar wind.

- A. Characteristics 2 and 4
  - B. Characteristics 1, 2, and 4
  - C. Characteristics 1 and 3
  - D. Characteristics 2, 4, and 5
12. A student hypothesized that algae will grow the most if they are exposed to light that has a wavelength of 495 nm. To test this hypothesis, the student should design an experiment with which of the following as the independent variable?
- A. Color of the algae
  - B. Rate of growth of the algae
  - C. Wavelength of light that algae are exposed to
  - D. Time of exposure to light

13. After a space craft has launched into orbit which of the following statements would be most accurate?
- A. Once in orbit, the space craft has escaped earth's gravity it no longer requires an upward force from rockets.
  - B. During launch, the rocket must apply Newton's Laws of motion, but once in orbit these laws no longer apply.
  - C. The craft in orbit must have artificial lighting systems since that they are in space and will no longer receive sunlight.
  - D. During launch the craft moves vertically, once in orbit it only moves horizontally.
14. A good adaptation for vegetation living in a rainforest would be —
- A. Front legs and paws that allow animals to burrow into the ground
  - B. The ability to grow very high to reach the sunlight
  - C. Layers of insulating feathers or fur
  - D. The ability of plants to regrow after fires
15. The more diverse an ecosystem is —
- A. the faster populations become extinct
  - B. the more similar the species will be
  - C. the more stable the ecosystem becomes
  - D. the fewer number of species are present
16. The role of a pioneer species are the first to return after a disturbance, they are the first stage of succession, and their presence increases the diversity in a region. A species that is responsible for primary succession in an ecosystem is most likely able to —
- A. Fend off a predator
  - B. Migrate
  - C. Live in arid environment
  - D. Produce its own food
17. The flower Black-eyed Susans have petals that appear yellow to humans, but UV markings give them a bull's eye-like design. These markings help the plants —
- A. Avoid parasites
  - B. Attract pollinators
  - C. Seek out moisture
  - D. Create a strong scent to attract organisms



19. Complex animals use their circulatory systems to provide their cells with water and food. Plants do not have circulatory systems. What have they developed instead to move nutrients and water?
- A. Xylem & Phloem
  - B. Cork Cells
  - C. Thylakoids
  - D. Granum
20. Which of the following is not a part of the integumentary system of the body?
- A. Hair
  - B. Fingernails
  - C. Skin
  - D. Esophagus
21. An animal's kidneys' job is to filter your blood. They remove wastes, control the body's fluid balance, and keep the right levels of electrolytes. To which level of biological organization does the kidney belong?
- A. Cell
  - B. Tissue
  - C. Organ
  - D. Organ system
22. Which structures perform similar functions in plant and animal cells?
- A. Mitochondria and cell membrane
  - B. Vacuole and chloroplast
  - C. Cell wall and nucleus
  - D. Ribosome and chloroplast
23. Which type of cell has a structure that most closely resembles a similar function to that of a skeletal system in a horse?
- A. Animal cell
  - B. Bacterial cell
  - C. Virus
  - D. Plant cell
- 
24. Which set of materials would be most appropriate to prepare a wet mount slide containing an onion cell?
- A. Microscope slides, cover slips, alcohol, scissors, toothpicks
  - B. Microscope slides, cover slips, water, forceps, scalpel
  - C. Microscope slides, cover slips, salt, scalpel, probe
  - D. Microscope slides, cover slips, forceps, salt water
25. According to the Cell Theory, viruses are not considered living. Which of the following would refute this previous statement concerning the Cell Theory?
- A. All living organisms have the ability to reproduce by themselves and viruses are not able to do this.
  - B. All living organisms have the ability to make their own energy and viruses are not able to do this.
  - C. All living organisms have the ability to move and viruses are not able to do this.
  - D. All living organisms are made from cells and viruses are not made from cells.

26. An elk grazing sees a nearby cougar charging to attack and eat the elk. Which of the following is the most likely response of the elk?
- A. Stand tall and intimidate the cougar
  - B. Disregard the charging cougar
  - C. Flee from the cougar
  - D. Attack the cougar
27. Bacteria can enter a person's body through many ways. As a result of harmful bacteria, an individual can vomit. This response helps fight infection by —
- A. Expelling the harmful bacteria from the body
  - B. Killing the harmful bacteria with acids found in the stomach
  - C. Creating new cells to track down and kill the harmful bacteria
  - D. Keeping the harmful bacteria away from other individuals
28. In snapdragons a cross between a homozygous parent with white flowers ( $C^W C^W$ ) and a homozygous parent with red flowers ( $C^R C^R$ ) will produce offspring with pink flowers ( $C^R C^W$ ). Using what the student has learned about genetics, there is evidence that shows the offspring has which of the following —
- A. Pure recessive
  - B. Pure dominance
  - C. Incomplete Dominance
  - D. Codominance
- 
29. A cat breeder was surprised when a white cat was born in a litter of brown cats. They researched to discover that white cat fur can result from a mutation. A mutation means that —
- A. The genetic information didn't copy correctly
  - B. The mother did not get enough nutrition
  - C. The white cat belonged to another litter
  - D. The white cat had its paternal genes only
30. A student is creating a family tree for a class project. While doing his research, he gathered pictures of all his cousins. From the pictures, he noticed that his cousins in the pictures all looked similar. What is the most likely reason for this resemblance?
- A. They have similar cell types.
  - B. They have similar DNA.
  - C. They have similar chloroplasts.
  - D. They have similar ribosomes.
31. A scientist develops a hypothesis, designs and conducts an experiment, and obtains data that supports the hypothesis. Which of the following best describes when a hypothesis becomes a theory?
- A. If one good set of data is collected
  - B. If the scientific method is followed correctly
  - C. Data is communicated to others
  - D. Data is supported by consistent data from numerous trials

32. Which of the following is the highest temperature?

A. 38°C

B. 96°F

C. 300 K

33. Which of these instruments will measure 77.5 ml the most precisely?

A. A 200 ml flask, graduated in 2 ml increments

B. A test tube with no markings on it

C. A 100 ml beaker graduated in 10 ml increments

D. A 100 ml cylinder graduated in 1 ml increments

34. Which best describes the following graphic?



A. Qualitative data

B. Inference

C. Quantitative data

D. Hypothesis

35. A student measures a piece of glass tubing that is 35.35 cm long. His measurements were 37.25 cm, 37.32 cm, 37.15cm and 37.20 cm. Which of the following statements is true?

A. the measurements were accurate but not precise

B. the measurements were precise but not accurate

C. the measurements were both precise and accurate

D. the measurements were neither precise not accurate



**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE I  
INVITATIONAL TEST**

Answer Key

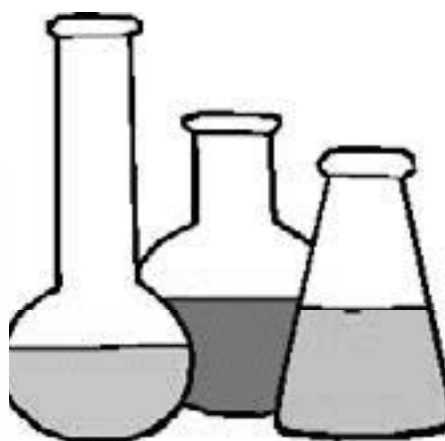
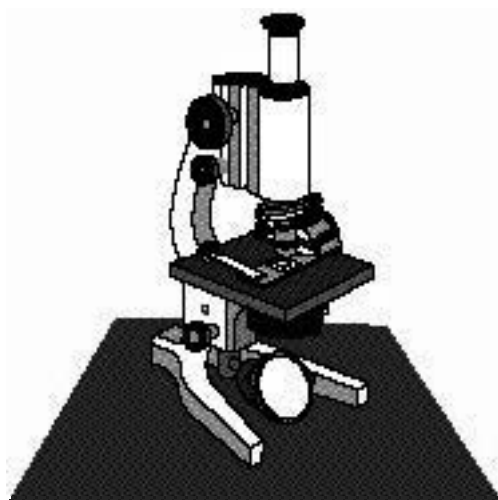
- |      |      |
|------|------|
| 1. D | 19.A |
| 2. C | 20.D |
| 3. B | 21.C |
| 4. D | 22.A |
| 5. C | 23.D |
| 6. D | 24.B |
| 7. B | 25.D |
| 8. C | 26.C |
| 9. C | 27.A |
| 10.A | 28.C |
| 11.D | 29.A |
| 12.C | 30.B |
| 13.A | 31.D |
| 14.B | 32.A |
| 15.C | 33.D |
| 16.D | 34.C |
| 17.B | 35.B |
| 18.B |      |

**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Science II

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE II  
INVITATIONAL TEST**

1. You should see this safety symbol when you need to take precaution when inhaling.



2. A student is studying strontium, a highly reactive element that humans need for strong bones. Which characteristic of strontium is most closely related to its chemical reactivity?
- A. The 38 protons in each atom
  - B. The density is  $2.45 \text{ g/cm}^3$
  - C. The atomic mass is 87.62 amu
  - D. The 2 valence electrons in each atom
3. How many kilograms are there in 6.5 pounds? (2.2 lbs = 1 kg)
- A. 14.3 kg
  - B. 6.5 kg
  - C. 2.95 kg
  - D. .34 kg
4. A certain atom consists of 12 protons, 11 neutrons, and a number of electrons. Which information will be most useful in determining the identity of the atom?
- A. The number of nucleons
  - B. The number of protons
  - C. The number of electrons
  - D. The number of valence electrons
5. Which of the following is the highest temperature?
- A.  $38^\circ\text{C}$
  - B.  $96^\circ\text{F}$
  - C. 300 K
6. Which property of an element would be most useful in determining the column it belongs in the periodic table?
- A. The boiling point
  - B. The brittleness
  - C. The color of it
  - D. The chemical reactivity

7. The chemical formula for sodium sulfate is  $\text{Na}_2\text{SO}_4$ . How many sodium atoms are in the formula for sodium sulfate?
- A. 1  
B. 2  
C. 6  
D. 7
8. A student mixes two solutions, planning to produce carbon dioxide. Which of the following is the evidence that best illustrates that a chemical reaction has produced  $\text{CO}_2$  gas?
- A. A change in color  
B. Formation of a precipitate  
C. Bubble formation  
D. Change in temperature
9. Four students' carts filled with food across the parking lot. Each student pushes with the same amount of force. Which cart has the greatest change in speed?
- A. A cart with a 10 kg mass  
B. A cart with a 5 kg mass  
C. A cart with a 7 kg mass  
D. A cart with a 15 kg mass
10. A team in Dallas travels south to San Antonio to participate in a tournament. The trip from Dallas to San Antonio is about 440 kilometers. The trip requires about 4 hours to complete on a bus. Which of the following best represents the velocity of the bus?
- A. 110 km/h  
B. 110 km/h South  
C. 1760 km/h  
D. 1760 km/h South
11. Andrew gathered a car, an incline plane, a stopwatch, a meter stick and several weights. What is most likely being tested?
- A. How the angle of a ramp affects the speed of the car  
B. How friction affects the speed of the car  
C. How forces work on the placement of the car and the ramp  
D. How mass affects the speed of the car
12. The friction due to air acting on a softball causes it to curve as it is pitched to home plate. This is a result of which of the following:
- A. Newton's 1st law  
B. Newton's 2nd law  
C. Newton's 3rd law  
D. Universal Law of Gravitation
13. Which of the following situations would allow for every location on Earth to have 12 hours of daylight and 12 hours of darkness per day?
- A. Earth orbiting the sun in a faster period each year  
B. Earth orbiting the sun in a perfect circle  
C. Earth is not tilted on its current axis  
D. Earth having multiple natural satellites

14. A parent explains how the moon shines to a small child by comparing it to an object that the child uses. Which statement below is the best explanation?
- A. The moon is like a flashlight. It produces its own light.
  - B. The moon is like a mirror. It reflects light.
  - C. The moon is like a glow stick. It produces its own light.
  - D. The moon is like a toaster. When it gets hot enough it glows.

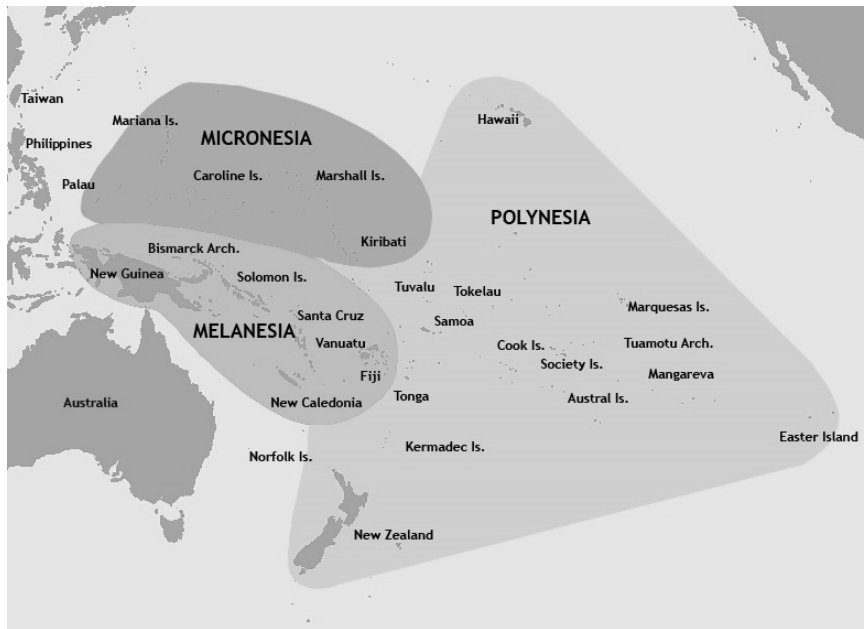


15. Which moon phase is associated with the highest tides?
- A. Three quarter
  - B. First quarter
  - C. New
16. A student was measuring a small amount of liquid during an experiment. What unit will she most likely use to record the data found in the experiment?
- A. Kilograms
  - B. Mass
  - C. Milliliter
  - D. Volume
17. The mass of a star helps determine which of the following —
- A. The length of its lifecycle.
  - B. The position of the star.
  - C. The galaxy it is located in.
  - D. The color of the star.
18. Why does Earth get more energy from the sun as compared to all the other stars in the universe combined?
- A. The sun is much bigger than all the other stars.
  - B. The sun is much hotter than all the other stars.
  - C. The sun is denser than all the other stars.
  - D. The sun is closer compared to the other stars.
19. Which of the following waves would be the most concerning to a human due to the wave's amount of energy and penetrating ability?
- A. Gamma Rays
  - B. Visible light
  - C. Infrared
  - D. Radio waves
20. Copernicus was the first to suggest which of the following concerning planetary motion —
- A. The universe has no center.
  - B. The Earth was not at the center of the solar system.
  - C. The Earth is at the center of the solar system.
  - D. The sun is at the center of the universe.
21. A science class made a model of a riverbed using a pool and damp sand. They "walked" a class pet through the sand, leaving behind footprints. Which processes were the students' most likely modeling?
- A. Formation of oil
  - B. Creation of fossils
  - C. Extinction of animals
  - D. Formation of a river

22. South America and Africa looked like they fit together similar to a puzzle. Which individual theorized this?
- A. Einstein  
 B. Hubble  
 C. Wegener  
 D. Hess

23. Islands located in the Pacific Ocean form because of which of the following?

- A. As the sea floor spreads apart, sediments gather due to ocean currents.  
 B. The water pressure causes magma to rise to the surface.  
 C. The atmospheric pressure.  
 D. The sea floor is spreading apart and magma is pushing to the surface.



24. What does a blue dashed line on the topographic map most likely represent?
- A. Hiking trail  
 B. River  
 C. Different rock type  
 D. Change in vegetation

25. When watching the weather map online, there are often "L" shown on the maps, as seen below. The "L" represents an area of low atmospheric pressure.

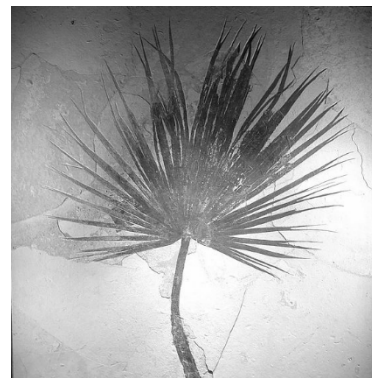


Which of the following is most likely occurring in the atmosphere in the area located at the "L"?

- A. Air is sinking at this location causing skies that are clear.  
 B. Air is sinking at this location causing skies that are cloudy.  
 C. Air is rising at this location causing skies that are clear.  
 D. Air is rising at this location causing skies that are cloudy.
26. A student uses a beaker, graduated cylinder, and a ruler to make measurements during a laboratory experiment. What was the student most likely measuring with these tools?
- A. Mass  
 B. Density  
 C. Volume  
 D. Temperature

27. A student created a model of convection in the ocean using a glass cup, mineral water, and food coloring. The model did NOT demonstrate convection as the student had intended. The model could be improved to demonstrate convection in the oceans by adding which of the following to the design –
- A. Adding a desk lamp
  - B. Adding a hot plate
  - C. Additional food colors
  - D. Adding a fan
28. Weather on the western edge of which of the following is most likely to be affected by an La Niña event —
- A. Africa
  - B. Australia
  - C. South America
  - D. Spain
29. Which of the following is not an example of how biotic factors interact with abiotic factors in an ecosystem?
- A. A wolf hunting its prey.
  - B. Plants removing carbon dioxide from the air and adding oxygen.
  - C. Dogs causing erosion by digging holes in the ground.
  - D. Reptiles sun basking.

30. Fossils of tropical organisms can be found buried in limestone rock in the North Texas region. These plants and animals are no longer found in this area. Which of the following is most likely the cause of the disappearance of these tropical organisms?
- A. Natural disasters destroyed all the tropical organisms.
  - B. Tropical animals ate all the tropical plants and everything became extinct.
  - C. Pollution killed off all the tropical organisms.
  - D. The climate in that area is different today than when tropical organisms lived.



31. In order to determine whether a liquid is acidic or basic, which would be the best to use:
- A. Salinity test
  - B. Turbidity test
  - C. Dissolved oxygen test
  - D. pH test

32. Many coastal regions are dependent on fishing for their local economies. Some areas have struggled because of overfishing. Which of the following would not be a recommendation of the scientists to help the local communities to reestablish the fish populations?
- A. Create an artificial reef for the fish to live
  - B. Make a law to limit the amount of fish caught
  - C. Introduce an invasive species to the environment
  - D. Release additional fish into the environment
33. Which of the following lists contains the most appropriate equipment for the student to use to find the density of irregular object?
- A. Beaker, balance, scalpel
  - B. Test tube, ruler, gloves
  - C. Spectroscope, calculator, ruler
  - D. Graduated cylinder, balance, calculator
34. Diagrams, photos, charts and tables are used by scientists during an experiment to do which of the following?
- A. Identify the independent and dependent variables
  - B. Predict the variables
  - C. Test a hypothesis
  - D. Record data
35. Which field of study did Newton's research involving laws of motion and gravitation contribute the most scientific understanding?
- A. Biology
  - B. Physics
  - C. Chemistry
  - D. Medical



**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE II  
INVITATIONAL TEST**

Answer Key

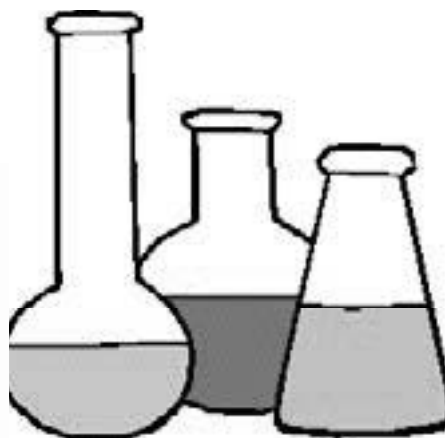
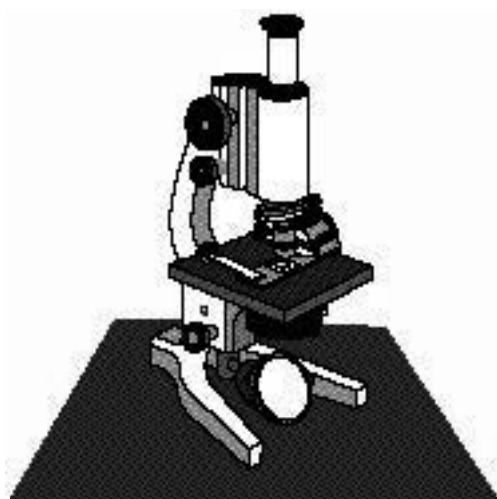
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| 9. D | 27.B |
| 10.B | 28.C |
| 11.D | 29.A |
| 12.B | 30.D |
| 13.C | 31.D |
| 14.B | 32.C |
| 15.C | 33.D |
| 16.C | 34.D |
| 17.A | 35.B |
| 18.D |      |

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Science I

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**UNIVERSITY INTERSCHOLASTIC LEAGUE**  
**2020-2021 SCIENCE I**  
**FALL/WINTER TEST**

1. The SDS for a chemical states that it is a highly volatile substance and is a nose and throat irritant. Which safety procedure should be followed based on the SDS information?
  - A. Use substance in minute amounts
  - B. Add water to the substance
  - C. Use in a ventilated area, such as a fume hood
  - D. Store substance in a dark colored container
2. Which statement best describes how a pond and ocean environment compare?
  - A. The pond and ocean environments support the same organisms because they are both water.
  - B. The pond and ocean environments support different organisms because ocean organisms cannot get over the land to get to the ponds.
  - C. The pond and ocean environments support the same organisms, but they will look different because of the type of water.
  - D. The pond and ocean environments support different organisms because most saltwater organisms cannot live in freshwater.
3. The lab equipment shown is being used, what task would require these specific tools?



- A. Measuring the area of the hallway
  - B. Determine the speed of a rolling skate board
  - C. Making an atomic model
  - D. Measuring the density of an irregular solid
4. How does secondary succession help restore equilibrium in an area destroyed by a natural disaster?
    - A. It increases the number and types of species.
    - B. It can bring back species from extinction.
    - C. It stops other natural disasters from occurring.
    - D. It decreases the rate of evolution.
  5. A student breaks a flask during a lab procedure. After telling the teacher, what should be done based on proper lab safety protocols?
    - A. Find a new flask
    - B. Tell an addition teacher
    - C. Find a mop and dust pan
    - D. Dispose of broken glass into proper container

6. Which of the following events would most likely cause an ecosystem to have the lowest biodiversity and population sizes five years after the original disaster?
- A. Clearing land for a parking lot
  - B. A river floods a field
  - C. A forest fire destroys part of a nature preserve
  - D. A lava flow creates a new section of an island

7. In what part of the picture is radiant energy from the sun being converted into chemical energy?



- A. Grass
- B. Bird
- C. Worm
- D. Rock

8. Dichotomous keys are NOT based on which of the following?
- A. Physical traits
  - B. Structural adaptations
  - C. Observable characteristics
  - D. Stimuli

9. What does this symbol indicate about a substance?
- A. Can cause injury to skin
  - B. Can catch on fire easily
  - C. Hazardous to the environment
  - D. Harmful to inhale



10. The following seed comes from a Cottonwood tree. Based on the image which of the following is most likely the manner in which this seed is dispersed?
- A. Stick to animals' fur
  - B. People planting seeds
  - C. Float on water
  - D. Transported by the wind



11. What do arrows represent in a food chain?
- A. The size of the organism
  - B. Dominance of the organism
  - C. The flow of energy
  - D. What an organism eats

12. There are many different breeds of horses. Each breed was developed because of specific traits needed or desired by the breeder. One type of horse is called a Thoroughbred, they are considered "hot-blooded" horses that are known for their agility, speed, and spirit. What kind of work would this animal be expected to do?
- A. Easy for small children to ride
  - B. Carry a very heavy load
  - C. Run a long distance without tiring
  - D. Run very fast in races
13. Which of the following is an unsafe practice during a lab?
- A. Detecting an odor by inhaling repeatedly
  - B. Watering a flower without using gloves
  - C. Wearing goggles while mixing chemicals
  - D. Using a stirring rod to circulate liquids
14. The first set of human teeth develop within the first two years of life. They will keep that set of teeth for a few years until they begin to become loose. They become loose and eventually fall out to make space for a new set of teeth that the person will use for the rest of their life. Based on this information, what is the function of having two different stages of teeth development in a lifetime?
- A. It allows the person time to learn brushing habits that are good before they get their permanent set of teeth.
  - B. It allows the person to grow larger teeth in the second stage that they would not be able to have as a baby.
  - C. It provides the person extra opportunities to have a full set of teeth in case they lost a tooth as a kid.
  - D. It allows the person to try various foods when they are older.
15. An experiment was done to test the effect of ice placed on to a hot metal block. Which tool would be used to measure the transfer of energy between the hot metal block and the ice?
- A. Spring scale
  - B. Balance
  - C. Thermometer
  - D. Spectrometer
16. A class was studying human body systems. Composed of a number of small organs distributed throughout the body, this system coordinates the metabolic activity of body cells by interacting with the nervous system. The class was studying which of the following systems?
- A. Endocrine system
  - B. Immune system
  - C. Circulatory system
  - D. Muscular system
17. A teacher fills a sealable bag with corn syrup, colored beads, and various marbles to model a cell. One problem with this model is that it cannot show which of the following?
- A. The organelles of the cell
  - B. The flexibility of the cell
  - C. The nucleus of the cell
  - D. The absorption of nutrients

18. Seeds are the offspring of plants. If a seed germinates and survives, it will grow to become a mature plant. Given this information, what level of organization describes a seed?
- A. Tissue  
B. Cell  
C. Organism  
D. Organ system
19. Energy stored in food is \_\_\_\_; as it is digested the food releases \_\_\_\_ energy for motion. Correctly complete this statement.
- A. Chemical; thermal  
B. Chemical; mechanical  
C. Radiant; mechanical  
D. Thermal; radiant
20. A restaurant has a large, walk-in refrigerator where food is stored for meals. Which cell organelle has a similar function to the refrigerator?
- A. Vacuole  
B. Nucleus  
C. Chloroplast  
D. Mitochondrion
21. Which of these processes does not describe a physical change in digestion?
- A. Teeth tearing food into smaller pieces  
B. Tongue shaping food as it pushes it into the esophagus  
C. Salvia in mouth breaking down starch  
D. Food being broken down by stomach muscles
22. Which situation shows an example of homeostasis in cells?
- A. A cell is attacked by a virus.  
B. A cell's nucleus sends signals throughout the cell to produce protein.  
C. A cell goes through meiosis.  
D. Water enters a cell via the cell membrane because it is dehydrated.
23. Some animals migrate across Africa in search of resources, such as grass for food. A drought would likely cause a migrating animal to:
- A. Migrate shorter distances  
B. Migrate farther distances  
C. Produce a larger herd  
D. Start eating meat as their primary food source
24. According to cell theory, what do each of the following organisms have in common?



- A. They can all reproduce by spontaneous generation.  
B. Each organism is able to photosynthesize.  
C. Cells are the basic unit of structure for each organism.  
D. They are all made up of the same exact atoms.

25. Which shows an organ applying a force?
- A. Gallbladder squeezing bile into the small intestine
  - B. Eye sending signals to the brain
  - C. Kidneys filtering
  - D. Salvia in the mouth breaking down food
26. Hibernation is a state of inactivity and metabolic depression in endotherms. Hibernation is a characterized by low body-temperature, slow breathing and heart-rate, and low metabolic rate. What is the purpose of hibernation?
- A. To allow organisms to survive hot temperatures
  - B. To allow organisms to survive when food is not available
  - C. To allow organisms to get needed sleep
  - D. To allow organisms to survive cold temperatures
27. Longhorn Cavern in Texas was created when limestone was carved out by running water, making its walls mostly smooth. This process best describes which of the following?
- A. Weathering
  - B. Deposition
  - C. Erosion
28. Which stimulus is most likely to cause an animal to respond by increasing its internal body temperature above a normal level?
- A. Over exposure to cold external temperatures
  - B. Digestion of food
  - C. An infection of the cells in the stomach
  - D. An increased heart rate after exercising
29. The Texas Water Development Board states groundwater is used about 80% for which of the following activities?
- A. Irrigating crops
  - B. Supplying residence
  - C. Water supply for swimming areas
30. A child grows to be 6'1", a similar height as its parent who is 6'3". Which of the following best describes why this happens?
- A. Genetic instructions for height were passed from the parent to the child.
  - B. The parent and child live together and environmental factors influenced the height.
  - C. The parent and child have the same diet, causing them to reach similar heights.
  - D. There is no direct link between the parent's height and the child's height.
31. Where would the greatest amount of diversity of an organism occur?
- A. In the center of a pond
  - B. Next to concrete
  - C. Freshly plowed field
  - D. Near a stream with rocks, flowing water, & vegetation
32. In sexual reproduction, how many genes does an offspring receive for each trait?
- A. 0
  - B. 1
  - C. 2
  - D. 3

33. In recent years, there have been numerous agencies planning manned trips to Mars. Why is traveling to Mars so difficult?
- A. Temperatures in space
  - B. Distance between planets
  - C. No landing runway on Mars
  - D. Erratic motion of planets

34. A new litter of puppies was born. The puppies in the litter do not all look the same. Which part of the cell contains the information that controls the traits of these dogs?
- A. Nucleus
  - B. Ribosomes
  - C. Mitochondria
  - D. Cell Wall



35. The End of Nature is a book written by Bill McKibben, published in 1989. It has been called the first book on global warming written for a general audience. In the book he describes nature as a force previously independent of human beings but now directly affected by the actions of people. Which of the following outcomes was MOST likely a resulting effect on society after reading this book?
- A. A rapid increase in the number of species
  - B. The development of a public awareness of the impact on the environment
  - C. An increase in the number of companies production
  - D. Merging of the governmental agencies



**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE I  
FALL/WINTER TEST**

Answer Key

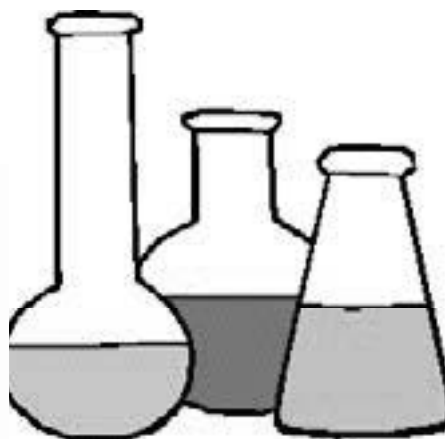
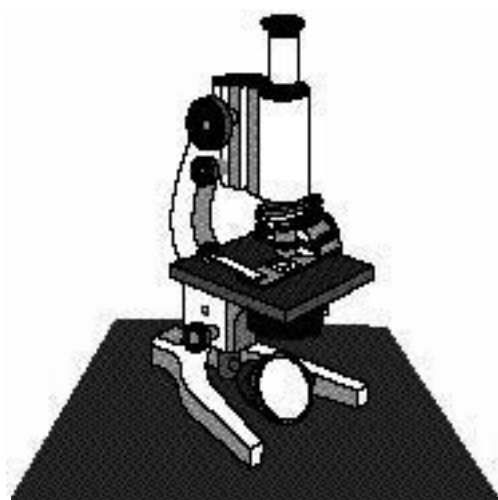
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| 7. A  | 25. A |
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| 9. B  | 27. C |
| 10. D | 28. C |
| 11. C | 29. A |
| 12. D | 30. A |
| 13. A | 31. D |
| 14. B | 32. C |
| 15. C | 33. B |
| 16. A | 34. A |
| 17. D | 35. B |
| 18. C |       |

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Science II

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE II  
FALL/WINTER TEST**

1. Which activity would require this safety symbol shown?

- A. Determining the mass of a density cube
- B. Transferring a metal
- C. Making a model rocket
- D. Determining the volume of a liquid



2. A convergent boundary is formed when two tectonic plates meet and push against each other. What type of landform would occur at this type of boundary?

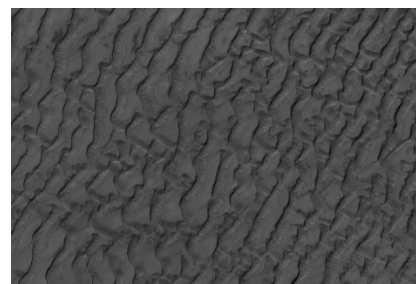
- A. Canyon
- B. Coastline
- C. Mountain
- D. Plains

3. A scientist is comparing the average snow fall in a year for New York City and Albany. Which graph is the best to use to represent this data?

- A. Single line graph
- B. Double line graph
- C. Single bar graph
- D. Double bar graph

4. This satellite picture shows sand dunes of a desert. The same area was photographed weeks before shows that the shape and location of some sand dunes have changed. Which of these most likely caused the changes in the dunes?

- A. Ocean waves
- B. Flowing rivers
- C. Blowing wind
- D. Crustal uplift



5. Which best describes a proton?

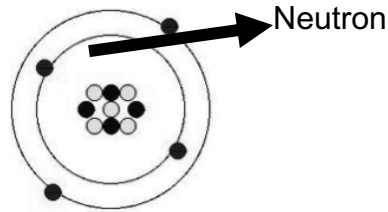
- A. No charge & the same mass as an electron
- B. Positive charge & more mass than an electron
- C. Positive charge & more mass than a neutron
- D. Negative charge & same mass than a neutron

6. Our yellow sun, a main-sequence star, has radiated energy into space. The energy that reaches earth has been responsible for which of the following?

- A. Creating electricity
- B. Influencing the ocean's tides
- C. The limited plant life found at the equator
- D. Convection current within earth's atmosphere

7. If a boat is traveling forward at 9 m/s and the current of the river, that acts opposite of the boat, changes from 3.5 m/s to 2.25 m/s; how does this affect the boat?
- A. The boat will move more slowly
  - B. The boat will experience no change in motion
  - C. The boat will move faster
  - D. The boat comes to a complete stop

8. What element is represented in the illustration?
- A. Li
  - B. Ne
  - C. Be
  - D. He



9. The term “jet stream” is often used by meteorologists to describe which of the following statements—
- A. Pressure exerted by the atmosphere at a given point
  - B. Narrow bands of strong wind in the upper levels of the atmosphere
  - C. Intense storm that originates in the tropics, forming in a single, warm air mass
  - D. Temperature to which air must be cooled for condensation to take place
10. Which group is made from reactive metals?
- A. 1
  - B. 7
  - C. 17
  - D. 18
11. The western region of California has mild temperatures with relatively small changes in temperature between daytime and nighttime. Which of these is most responsible for keeping the temperature range small?
- A. Daily high winds
  - B. Frequent cool fronts
  - C. Heat from deserts
  - D. Moisture from the ocean

12. What is the major difference between speed and velocity?

- A. Velocity is calculated as distance over time; speed is calculated as velocity over time
- B. Velocity has a direction associated with it; speed has no direction associated with it
- C. Speed has a direction associated with it; velocity has no direction associated with it
- D. Speed is calculated as distance over time; velocity is calculated as speed over time

13. Decomposers break down materials in a compost pile. When they do this, they release carbon dioxide into the atmosphere and nitrogen to the soil. Which of the following organisms would most likely be decomposers?
- A. Bacteria
  - B. Antelope
  - C. Plants
  - D. Cougar

14. How many atoms of hydrogen are in glycine?



A. 2

B. 5

C. 9

D. 10

15. Which of the following is the most likely affected by seasonal environmental changes?

- A. Number of peaches on a tree
- B. Growth height of young elephant
- C. Length of horns on a bull
- D. Number of wings on a dragonfly

16. A toddler collects rocks from the backyard. Which would be a chemical property of the rocks collected?

- A. Color of the rock
- B. Texture
- C. Bubbling when lemon juice is spilled on rock
- D. The rock is easily scratched with sandpaper

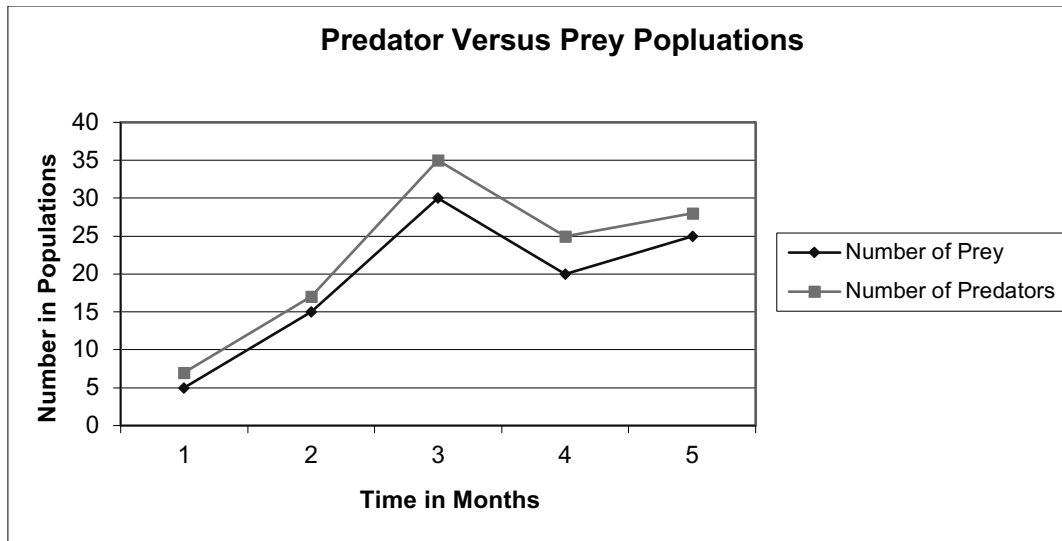
17. When offshore oil rigs are finished drilling, the platforms can be sunk into the ocean. If this occurs, how will this impact organisms in the immediate area?

- A. The platform destroys all organisms in the area.
- B. The platform releases chemicals into the area.
- C. The platform is used for future oil research.
- D. The platform provides a habitat for organisms.

18. Which of the following has the greatest mass?

- A. Solar system
- B. Nebula
- C. Galaxy
- D. Planet

(continued on next page)



19.

Based on the data above, what can be concluded about the predator prey relationship?

- A. they have an inverse relationship
- B. they have a weak relationship
- C. they have no relationship
- D. they have a direct relationship

20. To calculate the tidal force, which of the following statements is true?

- A. The moon's gravity pull in a specific location plus the moon's gravity pull in a specific location
- B. The moon's gravity pull in a specific location minus the moon's gravity pull in a specific location
- C. The moon's gravity pull in a specific location plus the moon's average gravitational pull over the entire earth
- D. The moon's gravity pull in a specific location minus the moon's average gravitational pull over the entire earth

21. During an experiment to test the thermal absorption rates of different pigmented materials, a white cloth was placed under a fluorescent lamp and a black cloth was placed under an incandescent lamp. A thermometer was placed under each cloth and the temperature was recorded every minute for 25 minutes. When the results were presented, it was pointed out that the experiment contained a flaw. What is the flaw?

- A. the researcher did not have a control variable in the experiment
- B. the researcher did not use the proper lab equipment to obtain the data
- C. the researcher should have used the cloths made of the same pigment
- D. the researcher did not have a dependent variable in the experiment

22. A rocket is launched to the moon. If no outside force is applied once the rocket reaches outer space, what happens to the speed as it travels in outer space?

- A. It will speed up
- B. It will slow down
- C. It will remain constant
- D. It will fluctuate

23. Dot diagrams, like the one shown below, are used to represent:



- A. Atomic numbers  
B. Atomic mass  
C. Isotopes  
D. Valence electrons
24. If the earth's axis was not tilted in relation to its plane of orbit, which of the following would most likely occur?  
A. The equator would have two seasons  
B. There would be no distinct seasons  
C. Night in the northern hemisphere would be longer than the southern hemisphere  
D. Summer in the northern hemisphere would be longer than the southern hemisphere
25. In a quarter an hour, a bicyclist travels 20 km. What is the cyclist average speed?  
A. 40 km  
B. 80 km  
C. 40 km/hr  
D. 80 km/hr
26. The sun is to \_\_\_ as Mars is to Venus.  
A. Tau Ceti  
B. Betelgeuse  
C. Rigel  
D. Sirius
27. A mixture of salt water needs to be separated. Which piece of equipment would be best to separate this mixture?  
A. Funnel and filter paper  
B. Magnet  
C. Bunsen burner  
D. Stirring rod
28. How much of the lunar surface receives sunlight at one specific instant?  
A. One half  
B. One third  
C. One fourth  
D. All of it
29. Which of the following units would be the most appropriate to measure the height of a newly sprouted plant?  
A. m  
B. L  
C. mL  
D. mm
30. Using the electromagnetic spectrum, astronomers can determine all of the following characteristics of a distant star except which of the following?  
A. Its chemical composition  
B. The organisms present  
C. Its temperature  
D. Its density

31. Thomson depicted his model of the atom using a plum pudding reference. The model of the atom has undergone many changes since then. What is the best scientific reason for these changes in the model?
- A. Computer generated graphics
  - B. People are more open to changes
  - C. Modifying ideas based on discoveries
  - D. People want the truth
32. The plate tectonic theory can best explain which of the following?
- A. Earthquakes
  - B. Mountain construction
  - C. Volcanic activity
  - D. Fossil record
33. Scientific models represent objects, systems, or events and are used as a tool to understand the world around us. Which of the following is not an example of a scientific model?
- A. Model of Saturn
  - B. Prototype of a rocket
  - C. Data table
  - D. Dinosaur fossil replica
34. Which of the following shows a system for identifying hazards associated with various materials?
- A. Biohazard symbols
  - B. Hazard to environment symbols
  - C. NFPA label
  - D. SDS label
35. After the energy from the sun has reached the Earth, thermal energy always moves from \_ to \_ areas naturally.
- A. Hot; cold
  - B. Warm; hot
  - C. Cold; cool
  - D. cold; hot



**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020 – 2021 SCIENCE II  
FALL/WINTER TEST**

Answer Key

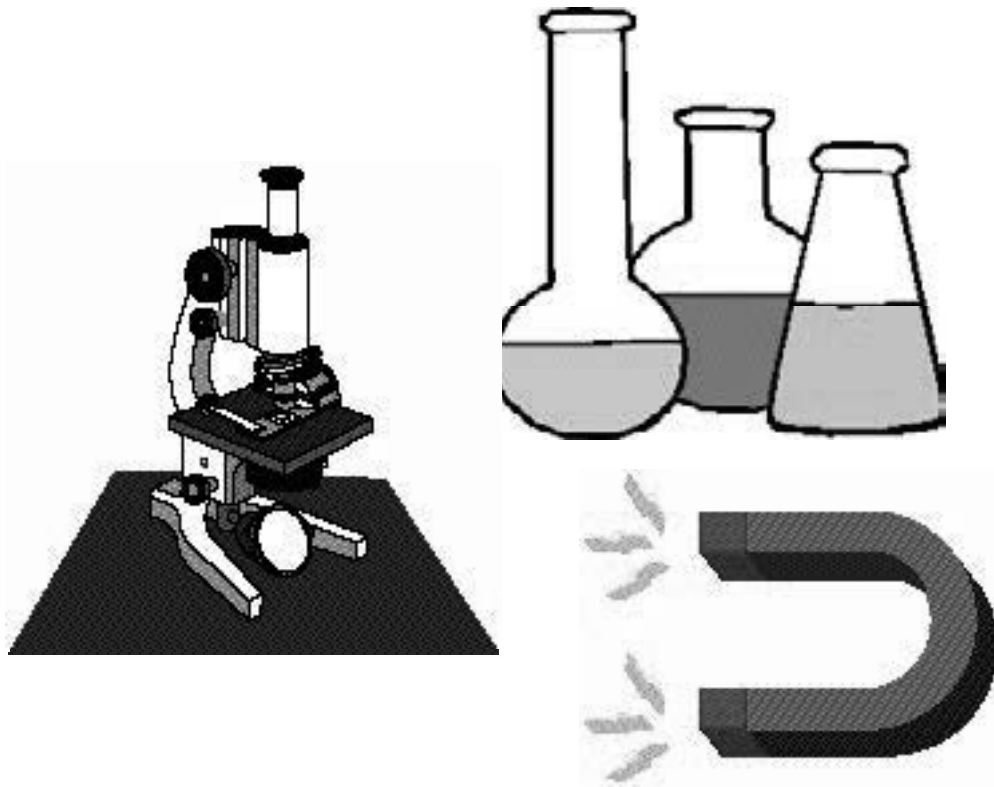
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| 7. C | 25. D |
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| 9. B | 27. C |
| 10.A | 28. A |
| 11.D | 29. D |
| 12.B | 30. B |
| 13.A | 31. C |
| 14.B | 32. D |
| 15.A | 33. C |
| 16.C | 34. C |
| 17.D | 35. A |
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**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



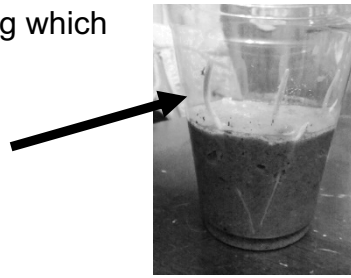
# Science I

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

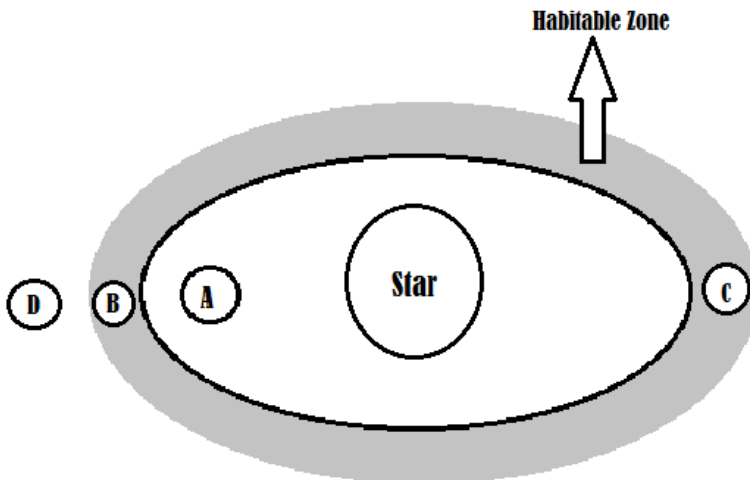
**UNIVERSITY INTERSCHOLASTIC LEAGUE**  
**2020-2021 SCIENCE I**  
**SPRING TEST**

1. Which of these converts radiant energy to chemical energy?
  - A. The bulb of a flashlight
  - B. The battery of a phone
  - C. The leaf of a vine
  - D. The screen of a television
  
2. Which of the following statements describe the best way to heat a test tube over a Bunsen burner flame?
  - A. Directly hold the test tube at a slight angle above the flame
  - B. Put on a rubber glove and then directly hold the test tube at a slight angle above the flame
  - C. Put the test tube in a test tube rack and then directly hold the test tube rack at a slight angle above the flame
  - D. Put the test tube in a test tube holder and then directly hold the test tube at a slight angle above the flame
  
3. A non-native organism is introduced to a diverse climax community. If the non-native organism has no predators, what short term effect will non-native organism have on a community?
  - A. The number of native organisms remain constant
  - B. The number of native organisms will decrease
  - C. The non-native organisms will become extinct
  - D. The non-native organisms will develop new predators
  
4. Phytoplankton consists mainly of single-celled algae. They live in aquatic environments and are autotrophs. What is the role of phytoplankton in this situation?
  - A. Consumer
  - B. Decomposer
  - C. Parasite
  - D. Producer
  
5. Which of the following is true about ecological succession?
  - A. Succession leads to the equilibrium in an ecosystem
  - B. Succession prevents ecosystems from reaching equilibrium
  - C. There is no relationship
  - D. Succession & equilibrium are the same thing
  
6. When sugar is dissolved in a cup of hot water, the resulting solution would represent which of the following —
  - A. chemical, irreversible change
  - B. physical, irreversible change
  - C. chemical, reversible change
  - D. physical, reversible change

7. The roots of the plant in the image to the right are exhibiting which behavior?
- A. Autotropism
  - B. Hydrotropism
  - C. Geotropism
  - D. Phototropism



8. A man pours hot coffee into two mugs are composed of different materials. The man notices that one mug keeps hot coffee warmer than the other mug and designs an experiment based on the observations. Which of the following questions should the man ask when designing the experiment?
- A. What is the best temperature to drink hot coffee?
  - B. What brand of coffee stays warm the longest?
  - C. What mug will hold the greatest volume of hot coffee?
  - D. What type of mug material is the best for keeping liquids warm?
9. Which planet would most likely be a location where life could be observed based on the information provided?



Planet	Oxygen	Water
A	Yes	Yes
B	Yes	No
C	Yes	Yes
D	No	Yes

- A. A
- B. B
- C. C
- D. D

10. What provides the body with the energy it needs for growth, movement, response, and repair?
- A. Fiber
  - B. Minerals
  - C. Alcohol
  - D. Sugar
11. A scientist wants to classify organisms from a specific biome using their name, as well as determining if they are extinct, endangered, or threatened. The most logical way to organize this information would be to use which of the following?
- A. Bar graph
  - B. Data table
  - C. Line graph
  - D. Tally marks

12. What type of dispersal is mostly likely used by this organism?

- A. Animal
- B. Wind
- C. Water
- D. Gravity



13. Which of the following events would most likely to cause an environmental disturbance in an archipelago?

- A. Earthquake
- B. Volcanic eruption
- C. Thunderstorm
- D. Fire caused by lightning strike

14. Blubber in arctic animals is an internal structural adaptation that allows animals to be successful in the environment. What function does blubber perform?

- A. It makes the animal look larger to intimidate predators
- B. Allows for better balance
- C. Provides more friction
- D. It protects the animal from freezing temperature

15. The Palo Duro Canyon is located in the panhandle of Texas.



What most likely created the riverbed?

- A. Glaciers
- B. Plate collisions
- C. Water erosion
- D. Volcanic activity

16. Which organism has small vacuoles?

- A. Plants
- B. Animals
- C. Virus

17. A man was changing the oil in his truck. He then dumped the used oil around the fence in his backyard to prevent weeds from growing. What the man didn't know was he was actually hurting the environment because of which of the following?

- A. The oil rots the base of the fence
- B. The oil goes deep into the soil and can pollute the groundwater
- C. The oil kills weeds and they are an important part of the environment
- D. The oil attracts more harmful insects

18. The cell wall is most similar to which body system?

- A. Nervous
- B. Digestive
- C. Respiratory
- D. Integumentary





19. A scientist is creating a graphic organizer to explain the result of an experiment that included offspring from sexual reproduction. What information would be incorrect if it was placed in the scientist's graphic organizer?

- A. Requires two cells from different parents
- B. Creates a genetically uniform offspring
- C. Offspring have a better chance for survival
- D. Offspring have increased resistance to disease

20. Which of the following characteristics of the planet Saturn most likely makes it impossible for life to exist?

- A. 9 times wider than Earth
- B. Has 53 confirmed moons
- C. Extreme temperature of -178 degrees Celsius
- D. Rotational period of 11 hours

21. Humans have selectively bred canines for specific jobs. Which dog is most likely to carry heavy weights in an environment that is cold?

A. 	B. 
C. 	D. 

22. Several agencies are wanting to send a manned craft to explore Mars. Which of the following would NOT be a problem for astronauts when they got to Mars?
- A. The ability to produce food
  - B. Radiant energy for solar panels
  - C. Amount of oxygen in the atmosphere
  - D. Amount of liquid water present on the planet

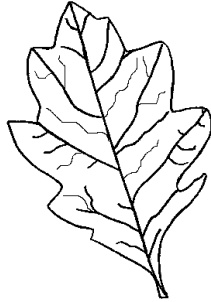
23. Which of the following do rattlesnakes do when they feel threatened?
- A. Rattle their tail and hiss
  - B. Make their hair stand up
  - C. Close their eyes
  - D. Slow their breathing

24. Despite its having limitations, what are some advantages of using the following model when learning about our solar system?



- A. Accurately demonstrates the planets orbit the sun in elliptical paths.
  - B. Accurately demonstrates planetary order and general appearance.
  - C. Shows relative distances between objects in our solar system.
  - D. Shows how the sun's radiant energy makes some planets too hot for life to exist.
25. Which is not an example of heredity in humans?
- A. Height
  - B. Eye color
  - C. Spoken language
  - D. Freckles
26. Which of the following is least likely to make an animal vomit?
- A. An infection in the stomach
  - B. Consuming large amounts of water
  - C. A toxin in the body
  - D. Feeling cold after swimming in cold water
27. In sexual reproduction, how many genes does an offspring get for each trait?
- A. 0
  - B. 1
  - C. 2
  - D. 4
28. Theophrastus is known as “The Father of \_\_\_\_\_” because of two seminal works concerning autotrophic organisms. To which field of study has Theophrastus work contributed the most scientific understanding?
- A. botany
  - B. genetics
  - C. medicine
  - D. zoology

29. Use the Dichotomous key to identify the leaf shown below:



1a	Leaf edge has no teeth, waves, or lobes	Go to 2
1b	Leaf edge has teeth, waves, or lobes	Go to 3
2a	Leaf has bristle at the tip	Shingle Oak
2b	Leaf has no bristles at the tip	Go to 4
3a	Leaf edge is toothed	Lombardy Poplar
3b	Leaf edge has waves or lobes	Go to 5
4a	Leaf is heart shaped	Red Bud
4b	Leaf is not heart shaped	Live Oak
5a	Leaf edge has lobes	English Oak
5b	Leaf edge has waves	Chestnut Oak

- A. Shingle oak
- B. Lombardy polar
- C. Red bud
- D. Live oak
- E. English oak

30. Which of the following is least likely to affect the phenotypes of an organism?

- A. Nucleus
- B. Vacuole
- C. Genes
- D. Chromosomes

31. Ovaries produce eggs and hormones. What body system does this best relate to?

- A. Integumentary
- B. Excretory and muscular
- C. Endocrine and reproductive
- D. Nervous and respiratory

32. Blood consists of red blood cells and white blood cells. Blood is mostly likely a

- A. Tissue
- B. Organ
- C. Organ system
- D. Cell



33. Based on the cell theory, what do the following organisms have in common?



- A. Reproduce spontaneously
  - B. Cells are the basic unit of structure
  - C. Organisms can photosynthesize
  - D. Made of all the same atoms
34. Which activity would require the safety symbol for a sharp object?
- A. Determining the mass of a density cube
  - B. Transferring a metal
  - C. Making a model rocket
  - D. Determining the volume of a liquid
35. Which lab investigation requires knowing the location of the fire extinguisher and the fire blanket?
- A. When investigating the effectiveness of various types of antibacterial wipes
  - B. When testing for the presence of sugar using benedicts solution, Bunsen burner, beaker, and test tubes
  - C. While dissecting a sheep eye using gloves, scalpel, probes, and pins
  - D. While comparing the rate of mold growing on oranges

**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE I  
SPRING TEST**

Answer Key

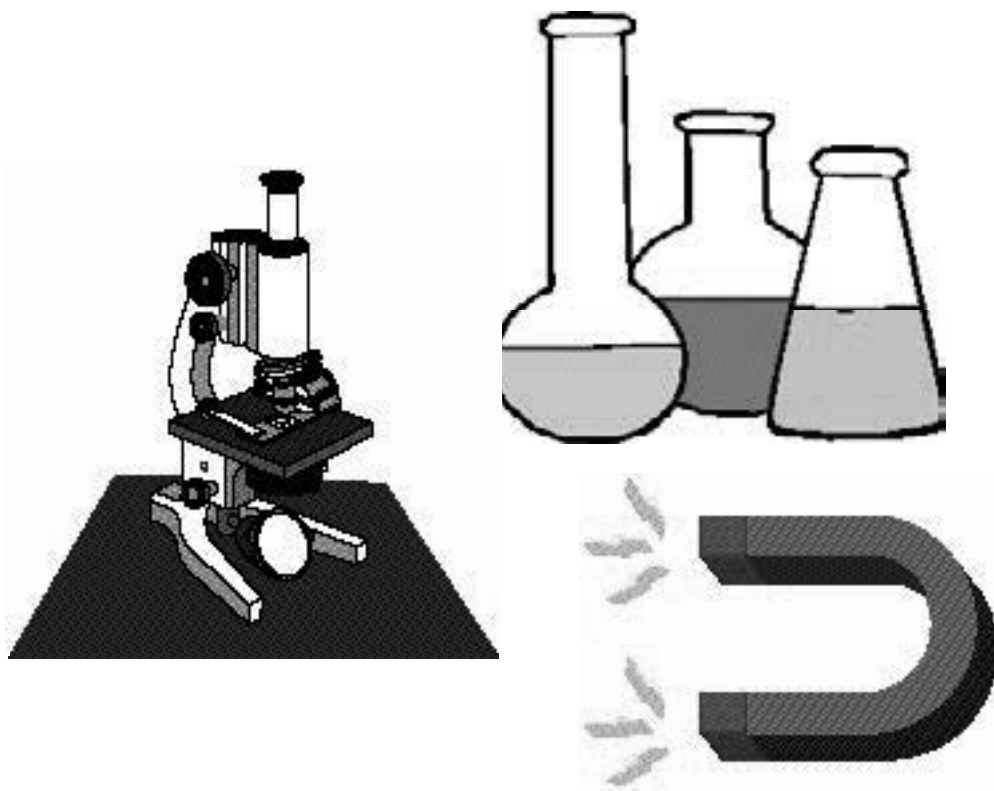
- |       |       |
|-------|-------|
| 1. C  | 19. B |
| 2. D  | 20. C |
| 3. B  | 21. B |
| 4. D  | 22. B |
| 5. A  | 23. A |
| 6. D  | 24. B |
| 7. C  | 25. C |
| 8. D  | 26. D |
| 9. C  | 27. C |
| 10. D | 28. A |
| 11. B | 29. D |
| 12. B | 30. B |
| 13. B | 31. C |
| 14. D | 32. A |
| 15. C | 33. B |
| 16. B | 34. C |
| 17. B | 35. B |
| 18. D |       |

**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League

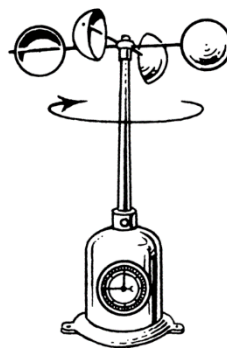


# Science II

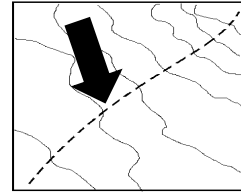
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**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE II  
SPRING TEST**

1. Scientists discovered rocks collected from West Texas and rocks collected from mountains in Antarctica were exactly the same age. If additional research showed that the rocks were geologically the same, this discovery would provide evidence of which of the following?
  - A. Coastal erosion
  - B. Plate tectonics
  - C. Atmospheric currents
  - D. Glacial melting
  
2. Which of the following best supports the Big Bang Theory?
  - A. Various shapes of galaxies
  - B. Speed of light
  - C. Red & blue shifts of light from stars
  - D. The motion of planets in orbit
  
3. In the Pacific Ocean, islands were formed because of which of the following?
  - A. The sea floor spread apart and sediments congregated due to ocean currents.
  - B. The turgor pressure of the water causes magma to rise to the surface.
  - C. The sea floor spreads apart and magma is push up to the surface.
  - D. Tectonic plates are pushed together, forming underwater mountain ranges.
  
4. Scientists observe that when continental plates & oceanic plates collide, the oceanic plate is forced below the continental pate. This might be because –
  - A. The different densities of the plates
  - B. The different masses of the plates
  - C. Convection current
  - D. The width of the plates
  
5. A student reads a topographic map and determines the highest elevation to be 1800 meters and the lowest elevation to be 1120 meters. Based on this information, what is the difference between these elevations?
  - A. 2920 m
  - B. 680 m
  - C. 340 m
  - D. 1800 m
  
6. How would the motion of an anemometer be changed if the amount of radiant energy that reached the Earth's atmosphere was to increase?
  - A. It would spin in the opposite direction
  - B. It would spin faster
  - C. It would spin slower
  - D. It would remain constant

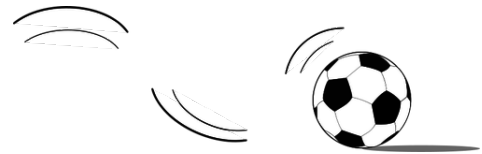


7. What does the dashed line on the topographic map likely represent?
- A. Running trail
  - B. Change in rock density
  - C. Stream
  - D. Vegetation line



8. Which of the following is an adaptation for plants in a rainforest that need to obtain sunlight in order to photosynthesize?
- A. Vines wrapping around tree trunks
  - B. Vibrant colored flowers
  - C. Shallow root system
  - D. Small leaves
9. Which of the following form of energy causes water to evaporate?
- A. Chemical
  - B. Radiant
  - C. Electrical
  - D. Potential
10. This type of weather front usually brings a decrease in temperature, clearing skies, & a sharp change in the wind direction. Which of the following best describes this scenario?
- A. Directional front
  - B. Stationary front
  - C. Warm front
  - D. Cold front
11. Changes in the polar ice caps would most likely indicate changes in what of the following?
- A. Solar flares
  - B. Earth's climate
  - C. Tectonic plates
  - D. Biodiversity
12. La Niña represents periods of below average sea surface temperatures across the equatorial Pacific Ocean. What is most likely to occur due to these specific conditions?
- A. Wetter than average conditions in the U.S. gulf coast
  - B. Increase in severe storms originating in the Pacific Ocean
  - C. Decrease in hurricanes originating in the Pacific Ocean
  - D. Colder temperatures in the winter for the southeast
13. Ocean currents move warm and cold water throughout the oceans, affecting weather systems and climates. Where do cold ocean currents originate?
- A. Close to the poles
  - B. Close to the equator
  - C. Close to the continents
  - D. Near the middle of oceans
14. Which relationship is most like dogs and ticks?
- A. Nitrogen-fixing bacteria and clover
  - B. Athlete's foot fungus and humans
  - C. Bees and colorful flowers
  - D. Deer and cougar

15. A force acts on a soccer ball for four seconds causing it to accelerate. If the ball is replaced with a similar ball with four times the mass and the same force is applied for the same amount of time, the acceleration of the similar ball will now be –



- A. One fourth the value
- B. One half the value

- C. Twice the value
- D. Four times the value

16. Which tool would be used to determine elements that are present in stars in a distant galaxy?

- A. Telescope
- B. Spectroscope

- C. Microscope
- D. Psychrometer

17. Large forest fires have become common in parts of United States in the past few years. The forest ecosystem is changed by this. Which of the following is also a result of a large forest fire?

- A. Carbon dioxide in the atmosphere decreases.
- B. Biodiversity increase.
- C. Mudslides can cover roads and river valleys after rains.
- D. Soil becomes less fertile.

18. It has been suggested that student misbehaviors are more common during a full moon than other times of the month. What could be done to test this hypothesis?



- A. Observe the behavior during a full moon & create categories for behaviors
- B. Create a survey
- C. Ask students when they misbehave the most
- D. Look a discipline records from previous years & compare with time of full moon

19. The world's coasts are being populated at a very rapid rate. In the United States, counties directly on the shoreline constitute less than 10 percent of the total land area, but account for 39 percent of the total population. Coastal areas are substantially more crowded than the U.S. as a whole, and population density in coastal areas will continue to increase in the future. In fact, the population density of coastal shoreline counties is over six times greater than the corresponding inland counties and this number continues to rise. Coastal areas are also the most visited by tourists across the globe. Which of the following threats to the ocean is most likely NOT caused by human actions?

- A. Increased pollution of marine environments
- B. Damaged coral reefs
- C. Higher hurricane wind speed
- D. Damaged sea turtle nesting sites

20. What is the electrical charge of the nucleus of an atom that has 12 protons, 13 neutrons, and 11 electrons?

- A. -11
- B. +12
- C. -12
- D. +11

21. A chemist is identifying the elements present in an unknown sample. What characteristic of an element's atoms will help the chemist determine the element's identity?
- A. The number of protons
  - B. The number of neutrons
  - C. The number of valence electrons
  - D. The number of electrons

22. If a lab requires that students have goggles, a graduated cylinder, and a thermometer; what task might they be performing?
- A. Calculating density
  - B. Measuring volume & temperature of a liquid
  - C. Measuring mass & temperature of a solid
  - D. Determining the meniscus

23. Which of the following statements best describes the elements located in Group 18?
- A. Chemically stable and liquid at room temperature.
  - B. Have eight valence electrons and are flammable.
  - C. Magnetic and boil at low temperatures.
  - D. Gaseous at room temperature and chemically stable.

24. In a mountain range there is a point called a tree line, in which trees do not normally grow near the top of the mountain. What environmental condition would most likely prevent trees from growing in this area?



- A. No oxygen is present
  - B. The air pressure is too high
  - C. The temperature is too low
  - D. There is no sunlight
25. Which of the following contains the greatest number of elements?
- A.  $O_2$
  - B.  $CH_4$
  - C.  $NaCl$
  - D.  $HNO_2$

26. Which of the following would you not do to minimize the impact of human activities on the world?
- A. Reusing items
  - B. Renovate all housing on a university campus
  - C. Recycle
  - D. Reduce consumption

27. Coal is comprised of carbon and hydrocarbons. When coal is burned in the presence of oxygen it produces carbon dioxide. Which of these is the most likely evidence that a chemical reaction has occurred when coal burns?
- A. The size and shape of the coal changes.
  - B. Oxygen is present.
  - C. A new substance is produced.
  - D. Coal is made up of multiple elements.

28. Which of the following is an alkaline earth metal?
- A. Potassium
  - B. Barium
  - C. Aluminum
  - D. Silver

29. When did Newton first propose his Laws of Motion?

- A. During World War I
- B. After the Civil War
- C. Approximately 300 years ago
- D. After humans orbited the Earth



30. A student uses a warped meter stick to take measurements in an experiment. Which of the following occurred when the student introduced the warped meter stick into the experiment?

- A. Method error
- B. Instrumental error
- C. Human error
- D. Estimation error

31. A leaf fell from a tree branch. Which of these best describes why the leaf fell in a crooked path instead of straight down?

- A. Objects with irregular shapes always fall in straight lines.
- B. Once the leaf fell, it continued moving in one direction because the forces were equal.
- C. Air resistance and gravity applied changing and unbalanced forces to the leaf.
- D. The force of the air on the leaf was more than the force of gravity.

32. Light from moving objects will appear to have different wavelengths depending on the relative motion of the source and the observer. An astronomer discovers two stars. Both stars appear to be red, but Star A appears a darker red. Which of the following can be concluded?

- A. Star A is moving towards the Earth
- B. Star A is moving away from Earth faster than Star B
- C. Star B is moving away from Earth and Star A is moving towards it
- D. Both Star A and B are moving towards Earth at similar velocities

33. Speed is a scalar type of measurement and velocity is a vector type measurement. What is the main difference between scalar and vector measurements?

- A. Scalar measurements include a direction
- B. Vector measurements include a direction
- C. Neither scalar nor vector measurements include a direction
- D. Both scalar and vector measurements include a direction

34. Each of these is an example of how research has changed scientific understanding except:

- A. Classification of living things now includes six kingdoms instead of five
- B. Protons and electrons are now known to be made of smaller particles of matter
- C. The metric system is now used around the world instead of other less precise systems
- D. Heat, which was once thought to be fluid, now is known as a form of energy.

35. A Safety Data Sheet for an alcohol substance has the following information:

Flash Point: 12 °C TO 16 °C

Based on this information it should be stored how?

- A. Contained inside a brown glass bottle
- B. Away from open flames
- C. Inside a freezer
- D. Packed inside a box of cat litter



**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-2021 SCIENCE II  
SPRING TEST**

Answer Key

- |       |       |
|-------|-------|
| 1. B  | 19. C |
| 2. C  | 20. B |
| 3. C  | 21. A |
| 4. A  | 22. B |
| 5. B  | 23. D |
| 6. B  | 24. C |
| 7. C  | 25. D |
| 8. A  | 26. B |
| 9. B  | 27. C |
| 10. D | 28. B |
| 11. B | 29. C |
| 12. C | 30. B |
| 13. A | 31. C |
| 14. B | 32. B |
| 15. A | 33. B |
| 16. B | 34. C |
| 17. C | 35. B |
| 18. D |       |

CONTESTANT NUMBER:

**FOR GRADER USE ONLY**

Score Test Below:

\_\_\_\_\_ Initials \_\_\_\_\_

\_\_\_\_\_ Initials \_\_\_\_\_

Papers contending to place:

\_\_\_\_\_ Initials \_\_\_\_\_



**University Interscholastic League  
A+ Social Studies Contest • Answer Sheet**

*Write your contestant number in the upper right corner, and circle your grade below.*

Circle Grade Level:      5      6      7      8

- |     |   |   |   |   |     |   |   |   |   |
|-----|---|---|---|---|-----|---|---|---|---|
| 1.  | A | B | C | D | 21. | A | B | C | D |
| 2.  | A | B | C | D | 22. | A | B | C | D |
| 3.  | A | B | C | D | 23. | A | B | C | D |
| 4.  | A | B | C | D | 24. | A | B | C | D |
| 5.  | A | B | C | D | 25. | A | B | C | D |
| 6.  | A | B | C | D | 26. | A | B | C | D |
| 7.  | A | B | C | D | 27. | A | B | C | D |
| 8.  | A | B | C | D | 28. | A | B | C | D |
| 9.  | A | B | C | D | 29. | A | B | C | D |
| 10. | A | B | C | D | 30. | A | B | C | D |
| 11. | A | B | C | D | 31. | A | B | C | D |
| 12. | A | B | C | D | 32. | A | B | C | D |
| 13. | A | B | C | D | 33. | A | B | C | D |
| 14. | A | B | C | D | 34. | A | B | C | D |
| 15. | A | B | C | D | 35. | A | B | C | D |
| 16. | A | B | C | D | 36. | A | B | C | D |
| 17. | A | B | C | D | 37. | A | B | C | D |
| 18. | A | B | C | D | 38. | A | B | C | D |
| 19. | A | B | C | D | 39. | A | B | C | D |
| 20. | A | B | C | D | 40. | A | B | C | D |

**INVITATIONAL 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Social Studies

grades 5 & 6

**DO NOT OPEN TEST  
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**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-21 A+ SOCIAL STUDIES  
INVITATIONAL TEST — GRADES 5 & 6**

|\_\_\_\_\_|\n1929            to            1939

1. Which era in United States history lasted during these years?
  - a. Progressive Era
  - b. Great Depression
  - c. World War II
  - d. Era of Good Feelings
  
2. Economic hard times in Europe led to the rise of ambitious leaders called \_\_\_\_\_, who wanted complete control of their countries and their people.
  - a. Senators
  - b. Prime Ministers
  - c. Presidents
  - d. Dictators



3. What was a period of severe drought in the 1930s that destroyed many farms on the Great Plains?
  - a. Dust Bowl
  - b. Blue Norther
  - c. Galveston Hurricane
  - d. Ice Age
  
4. Where did many Americans try to make money during the 1920s?
  - a. McDonald's
  - b. Farms
  - c. Stock Market
  - d. Insurance
  
5. Who in an address to the United States Congress gave this famous quote?

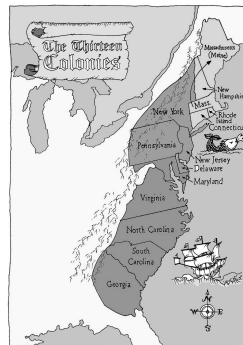
*"Yesterday, December 7, 1941- a date which will live in infamy- the United States of America was suddenly and deliberately attacked by naval and air forces of the Empire of Japan."*

- a. Lyndon Baines Johnson
  - b. Harry Truman
  - c. Theodore Roosevelt
  - d. Franklin D. Roosevelt
  
6. Which nation was NOT a member of the Allies during World War II?
  - a. Britain
  - b. Italy
  - c. France
  - d. Russia

7. In the early 1900s, what created a demand for people to work in the factories in the North?
  - a. Trade treaties with Mexico
  - b. Flu epidemic
  - c. Demand for military equipment in World War I
  - d. Opening of a large port in Charleston



8. Who became a symbol for the women who kept American factories running during World War II?
  - a. Rosie the Riveter
  - b. Typhoid Mary
  - c. Yellow Rose of Texas
  - d. Sweet Sue



9. Which colonial region enjoyed the warmest climate and longest growing season?
  - a. New England Colonies
  - b. Middle Colonies
  - c. Southern Colonies
  - d. Backcountry
10. Why was New York City built in its location?
  - a. Millions of beavers lived in the forests
  - b. Low and swampy land
  - c. At the base of the Mississippi River
  - d. Settlers could control trade on the Hudson River
11. How did settlers on the Great Plains adapt to the lack of trees or rocks?
  - a. Lived in tents
  - b. Used sod as a building material
  - c. Transported lumber on the Pony Express
  - d. Hauled limestone from quarries in Texas

12. What New Deal program built dams along rivers in the South?
- Tennessee Valley Authority
  - Civil Works Administration
  - Civilian Conservation Corps
  - Farm Security Administration
13. Why did Francis Lowell build his cloth-making factory close to a river?
- Source of power
  - Protection
  - Food source
  - Irrigation of crops
14. Which mountains did the Transcontinental Railroad have to cross for its completion at Promontory Point, Utah?
- Green
  - Davis
  - Appalachians
  - Sierra Nevada
15. \_\_\_\_\_ is the amount of a good or service that is available.
- Demand
  - Supply
  - Consumer
  - Producer
16. Who makes these economic decisions?
- \* **Which goods or services to produce**
  - \* **How to produce the goods or services**
  - \* **At what price to sell the goods or services**
  - \* **How the goods or services will be distributed**
- Farmers
  - The Government
  - Business owners
  - Workers
17. What did the German army accomplish when it swept around the right and rear of the Armies of the north?
- Allowed time for construction of rail lines to the front
  - Stranded large numbers of German soldiers in Belgium
  - Bought time for reinforcements to arrive
  - Severed British communications for food and ammunition
18. Who had appealed to the British and French armies for help?
- Belgian King
  - Russian Oligarch
  - Japanese Premier
  - Italian Prime Minister
19. What posed as a problem for the evacuation of Dunkirk?
- Crowds of people
  - Calm seas
  - Adverse weather
  - Crowded docks

20. Why did Churchill think the House of Commons might want to enter into a secret session?
- Not to raise false hopes of the citizens
  - So the enemy will not read it the next day
  - Reduce outside influence
  - Restrict demonstrations from the public
21. When did Franklin D. Roosevelt deliver the first of his four Inaugural Addresses?
- January 7, 1940
  - May 25, 1936
  - November 25, 1942
  - March 4, 1933
22. How did Roosevelt's address reflect the personal difficulties of the times?
- Stated a great number of people toil with little return
  - Showed the vast numbers of jobs created
  - Announced new markets for farm products
  - Reported a decline in the death rate
23. What did Roosevelt ask Congress for permission to use in the "war against the emergency"?
- National stockpiles of supplies
  - Martial law
  - Broad executive power
  - The military
24. Who was Eisenhower addressing in his World War II memo?
- Confederate States of America
  - Allied Expeditionary Force
  - Luftwaffe
  - Co-Belligerent Army
25. What title finishes the chart?

?

**Lowest place on the Earth's surface**

**Important source of potash**

**Earth's saltiest body of water**

- |              |                      |
|--------------|----------------------|
| a. North Sea | c. Dead Sea          |
| b. Red Sea   | d. Mediterranean Sea |

26. Because of its location in the Alps and policy of neutrality, which nation is the headquarters for many international organizations?
- Bolivia
  - Nigeria
  - Iceland
  - Switzerland
27. Who has the longest unprotected border in the world?
- Canada-United States
  - Egypt-Saudi Arabia
  - Mexico-United States
  - Italy-Spain

28. Most of the economy of Panama is based on farming but it also earns money from what source?
- a. Black Forest
  - b. Panama Canal
  - c. Ruhr
  - d. Serengeti Plain
29. Which of these factors finishes the list on how speed has changed trade?
- \* **Telephones**
  - \* **?**
  - \* **High-speed cargo ships**
- a. Pony Express
  - b. Jet planes
  - c. Stagecoach
  - d. Steamboat
30. Taiwan's wealth comes largely from high-technology industries, manufacturing and trade with other countries. What are high-technology industries?
- a. Young worker who learned a trade or skill from a master teacher
  - b. Industry that produces goods such as clothing, shoes, furniture and house-hold products
  - c. Produce computers and other kinds of electronic equipment
  - d. Industry that provides services like banking, education and tourism to people rather than producing goods
31. Who is an entrepreneur?
- a. Official of the Christian Church
  - b. Person who flees to another country to avoid persecution or disaster
  - c. All-powerful government leader
  - d. Person who organizes and manages a business undertaking, assuming the risk for the sake of profit
32. Which territory in Canada has more than 60 percent of its population under the age of 25 and the government is the largest employer because of a lack of other jobs?
- a. Nunavut
  - b. Ottawa
  - c. British Columbia
  - d. Nova Scotia
33. What action did the Indian government take in an effort to keep another Bengal Famine from occurring?
- a. Process by which grasslands change to desert
  - b. Green Revolution was an effort to use modern techniques and science to increase food production
  - c. Process of removing salt to make seawater drinkable
  - d. Widespread cutting of forests
34. Which animal that brought profits to early European traders is now protected in Cote d'Ivoire?
- a. Elephants
  - b. Lions
  - c. Tigers
  - d. Deer



35. \_\_\_\_\_ has one of the most powerful telescopes in the world.
- a. El Capitan
  - b. Palo Duro Canyon
  - c. McDonald Observatory
  - d. Padre Island

36. Which natural resource in Texas finishes this chart?

**Nonrenewable Resources in Texas**

Sulfur	Uranium	Gypsum	Oil	?	Coal
--------	---------	--------	-----	---	------

- a. Diamonds
- b. Solar
- c. Wind
- d. Natural gas

37. Who became the first surgeon to successfully implant a mechanical heart pump in a patient?

- a. Michael DeBakey
- b. Michael Dell
- c. Gordon Teal
- d. Janis Joplin

38. When is Texas Independence Day?

- a. April 21
- b. March 2
- c. March 6
- d. February 23



39. Who is the Texas political leader in the picture?

- a. Ken Paxton, Attorney General
- b. Dan Patrick, Lt. Governor
- c. George Bush, Commissioner of General Land Office
- d. Greg Abbott, Governor

40. Which Texas politician is a Commissioner on the Texas Railroad Commission?

- a. David Newell
- b. Paul Green
- c. Wayne Christian
- d. Glenn Hegar

**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-21 A+ SOCIAL STUDIES  
INVITATIONAL TEST — GRADES 5 & 6**

**Answer Key**

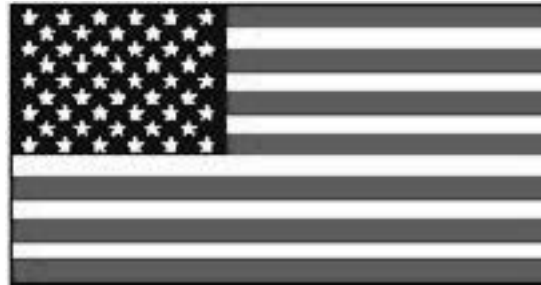
- |       |       |
|-------|-------|
| 1. B  | 21. D |
| 2. D  | 22. A |
| 3. A  | 23. C |
| 4. C  | 24. B |
| 5. D  | 25. C |
| 6. B  | 26. D |
| 7. C  | 27. A |
| 8. A  | 28. B |
| 9. C  | 29. B |
| 10. D | 30. C |
| 11. B | 31. D |
| 12. A | 32. A |
| 13. A | 33. B |
| 14. D | 34. A |
| 15. B | 35. C |
| 16. C | 36. D |
| 17. D | 37. A |
| 18. A | 38. B |
| 19. C | 39. D |
| 20. B | 40. C |

**FALL/WINTER DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Social Studies

grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**UNIVERSITY INTERSCHOLASTIC LEAGUE**  
**2020-21 A+ SOCIAL STUDIES**  
**FALL/WINTER TEST — GRADES 5 & 6**

1. Which period of strong economic growth gave people higher wages and shorter workweeks to enjoy themselves?
  - a. Gilded Age
  - b. Enlightenment
  - c. Great Awakening
  - d. Roaring Twenties
  
2. What event was caused by these factors?
  - **Surplus of goods**
  - **Higher unemployment**
  - **Widespread debt**
  - a. World War II
  - b. Great Depression
  - c. Progressive Era
  - d. Era of Good Feelings
  
3. Why did farmers have difficulty paying off their debts?
  - a. Trade treaty with China raised prices for crops
  - b. Surplus crops were purchased by the federal government
  - c. Profits they received for their crops were not enough to pay their debts
  - d. Baby Boom increased agricultural demand
  
4. What title replaces the question mark?

**Benito Mussolini**                      **?**                      **Adolf Hitler**

  - a. Dictators that came to power prior to and during World War II
  - b. Religious leaders during the Great Awakening
  - c. Leaders of Allied Nations
  - d. Judges at the Hague
  
5. When did World War II begin?
  - a. 1937 Japan invades China
  - b. Hitler sends troops into Poland on September 1, 1939
  - c. In 1935 Mussolini attacks Ethiopia
  - d. 1936 Germany and Italy sign a pact to support each other
  
6. Where did Japanese planes bomb the United States fleet on December 7, 1941?
  - a. Sheppard Field, Texas
  - b. Ft. Benning, Georgia
  - c. Pearl Harbor, Hawaii
  - d. Ft. Bragg, North Carolina



7. The group of African-American and Caribbean-born military pilots who fought in World War II pictured above was part of what fighting organization?
- a. Tuskegee Airmen
  - b. Flying Tigers
  - c. Doolittle Raiders
  - d. Hood's Brigade



8. Which colonial region had a warm climate, fertile soil and long, wide rivers that made it better suited for farming?
- a. New England Colonies
  - b. Backcountry
  - c. Southern Colonies
  - d. Middle Colonies
9. What city was a 10-square-mile area along the Potomac River not far from George Washington's Virginia home?
- a. New York
  - b. Philadelphia
  - c. Washington, D.C.
  - d. Savannah
10. Where did most new immigrants that came to the United States tend to settle?
- a. In communities where the language and traditions were familiar
  - b. Along the Mississippi River
  - c. Near deposits of gold
  - d. In the South
11. Which people settled the area known as Florida and founded the first permanent European settlement in what is now the United States?
- a. French
  - b. English
  - c. Dutch
  - d. Spanish

12. What invention helped homesteaders on the Great Plains to pump water from deep beneath the ground?
- a. Plow
  - b. Windmills
  - c. Cisterns
  - d. Reaper
13. Which region of colonial America contained many rivers that connected inland farms with ports along the region's coast?
- a. Southern Colonies
  - b. Middle Colonies
  - c. New England Colonies
  - d. Backcountry
14. Why did pioneers create settlements along or near the Ohio River and Mississippi Rivers?
- a. Needed for irrigation
  - b. Fish were needed as a food source
  - c. Used waterways as trade routes
  - d. Protection from enemies
15. How does supply and demand affect consumers?
- a. Government offers consumers what they want to provide and its price
  - b. Consumers determine price willing to pay according to whether they want it or not
  - c. Producers set prices and amounts of goods
  - d. Consumers have no rights
16. What type of economy is a free enterprise system?
- a. Government allows little or no private ownership of property
  - b. Many businesses are owned and run by the government
  - c. Country that uses tax money to provide social services for sick, needy, jobless, or retired people
  - d. People are free to start their own businesses and own their own property
17. Who delivered this famous quote to the House of Commons?
- "We shall go on to the end, we shall fight in France, we shall fight on the seas and oceans, we shall fight with growing confidence and growing strength in the air, we shall defend our island whatever the cost may be, we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills;"*
- a. Charles De Gaulle
  - b. Winston Churchill
  - c. Joseph Stalin
  - d. John Kennedy
18. What had been a special target for Nazi bombs?
- a. Churches
  - b. Schools
  - c. Hospital ships
  - d. Historical monuments
19. Which military weapon did the Germans NOT use against French and British troops at Dunkirk?
- a. Atomic bomb
  - b. Magnetic mines
  - c. Cannons
  - d. U-boats

20. What type of military weapons are the Hurricane, Spitfire and Defiant?
- Ships
  - Canons
  - Rifles
  - Airplanes
21. According to Franklin Roosevelt, who were “money changers”?
- Farmers
  - Bankers
  - Laborers
  - Politicians
22. What did Roosevelt see as his “greatest primary task”?
- Give all citizens \$1000 a month
  - Provide housing for all who needed it
  - To put people to work
  - Set up soup kitchens in all cities with a population of 10,000 or more
23. How has our political system been able to endure the test of time?
- Our Constitution
  - Enormous amounts of capital
  - Willing labor source
  - Gifted leaders
24. When did Eisenhower write his famous memo to the Allied Expeditionary Force?
- 1940
  - 1945
  - 1941
  - 1944
25. What dam provides these factors that aid the Egyptian economy?
- **Controls water needed for fields**
  - **Major source of electric power**
  - **Blocks flow of silt**
- Aswan Dam
  - Three Gorges Dam
  - Buchanan Dam
  - Kariba Dam
26. Which area in western Germany, developed around rich deposits of coal and iron ore, is one of the world’s most important industrial centers?
- Sabine
  - Ruhr
  - Namib
  - Pampas
27. \_\_\_\_\_ is the only city in the world that lies on two continents.
- London
  - Paris
  - Moscow
  - Istanbul
28. Which nation, an archipelago of more than 7000 islands of volcanic mountains and forests, spent more than 300 years as a Spanish colony and has only become an independent democratic republic since 1946?
- Malaysia
  - New Zealand
  - Philippines
  - Australia
29. What is driving globalization today?
- Decreased transportation
  - Decreased capital
  - Lack of leadership
  - Search for cheap labor

30. How has China been able to learn new business methods?
- Prohibited trade with other countries
  - Sought new trade routes
  - Ask other countries to invest into their developing businesses
  - Invented high-speed cargo ships
31. Why is Luxembourg so attractive to foreign companies?
- Small labor force
  - Most people in this country are multilingual
  - Cheap labor
  - Lack of capital
32. Which country's economy is most similar to that of the United States?
- Canada
  - Libya
  - Brazil
  - Nepal
33. Located 90 miles south of Florida, \_\_\_\_\_ is one of the world's top sugar producers.
- Cameroon
  - Cuba
  - France
  - Switzerland

34. What North American country best finishes the chart?

?

**Rapidly increasing population**

**Increasing national debt**

**Rising pollution**

- Mexico Challenges
- Uganda Challenges
- Iceland Challenges
- Chile Challenges

35. Who developed the integrated circuit that led to the creation of the computer chip?

- Walt Cunningham
- Audie Murphy
- Michael DeBakey
- Jack Kilby

36. What company finishes the list of air-defense industries in Texas?

- **General Dynamics**
- **?**
- **Texas Instruments**

- Dell
- Toyota
- Boeing
- Monsanto

37. Which city with its hospitals and medical schools, like M.D. Anderson, leads the world in medical research?

- Houston
- San Antonio
- Dallas
- Amarillo



38. Why is Juneteenth celebrated as a holiday in Texas?
- Texas leaders decided to declare independence from Mexico
  - Union General Gordon Granger announced that all enslaved Texans were free under United States law
  - Day Texas became a state
  - Oil is discovered in Texas



39. Who is the Texas political leader in the picture?
- Greg Abbott, Governor
  - Glenn Hegar, Comptroller of Public Accounts
  - Sid Miller, Commissioner of Agriculture
  - Dan Patrick, Lt. Governor
40. In which Texas political office do these individuals serve?
- **Jimmy Blacklock**
  - **Debra Lehrmann**
  - **John Devine**
  - **Jeff Brown**
- Texas Railroad Commission
  - Court of Criminal Appeals
  - Supreme Court of Texas
  - State Board of Education

**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-21 A+ SOCIAL STUDIES  
FALL/WINTER TEST — GRADES 5 & 6**

**Answer Key**

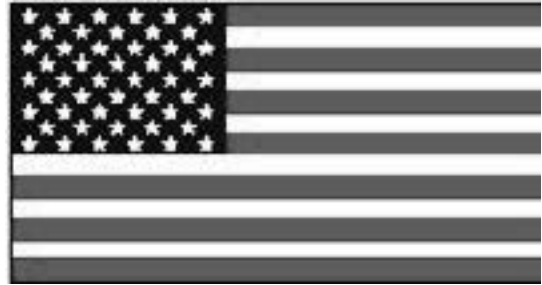
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|-------|-------|
| 1. D  | 21. B |
| 2. B  | 22. C |
| 3. C  | 23. A |
| 4. A  | 24. D |
| 5. B  | 25. A |
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| 8. D  | 28. C |
| 9. C  | 29. D |
| 10. A | 30. C |
| 11. D | 31. B |
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**SPRING DISTRICT 2020-2021**

**A+ ACADEMICS**



University Interscholastic League



# Social Studies

grades 5 & 6

**DO NOT OPEN TEST  
UNTIL TOLD TO DO SO**

**UNIVERSITY INTERSCHOLASTIC LEAGUE**  
**2020-21 A+ SOCIAL STUDIES**  
**SPRING TEST — GRADES 5 & 6**

***"I see one-third of a nation ill-housed, ill-clad, and ill-nourished."*** Franklin Roosevelt

1. What time period in United States history does this quote describe?
  - a. Progressive Era
  - b. Great Depression
  - c. Era of Good Feelings
  - d. Gilded Age

1939-----1945

2. Which event occurred during these years?
  - a. Dust Bowl
  - b. Enlightenment
  - c. World War II
  - d. Great Awakening
3. How did events at Pearl Harbor change the American position on World War II?
  - a. Emphasized an isolationist policy
  - b. Encouraged expansionist feelings
  - c. Reduced need for trade treaties
  - d. United States could no longer stay out of the war

- Italy
- Germany
- Japan

4. What World War II alliance were these nations members?
  - a. Axis
  - b. Confederate States
  - c. Allies
  - d. Vatican States
5. Why did President Truman decide to use the atomic bomb?
  - a. Forced Germany to surrender
  - b. Allowed Italy time to remove troops from Europe
  - c. Provided economic security for the United States
  - d. Would force Japan to surrender and save many American lives
6. The \_\_\_\_\_ was best known for its history as a fighting unit composed almost entirely of second-generation American soldiers of Japanese ancestry who fought in World War II.
  - a. 151<sup>st</sup> Airborne Unit
  - b. 442<sup>nd</sup> Regimental Combat Team
  - c. Hood's Brigade
  - d. 32<sup>nd</sup> Military Combat Team



7. Which colonial region of the United States had thin, rocky soil but people found it rich in other valuable resources such as thick woods that would provide excellent timber and coastal waters rich in fish?
  - a. New England Colonies
  - b. Southern Colonies
  - c. Middle Colonies
  - d. Backcountry
  
8. What colonial region had many towns that were self-sufficient, meaning they relied on themselves for most of what they needed?
  - a. Backcountry
  - b. Middle Colonies
  - c. New England Colonies
  - d. Southern Colonies
  
9. \_\_\_\_\_ was purchased by President Jefferson from France so that it would remain open for American trade.
  - a. New Orleans
  - b. Brownsville
  - c. Savannah
  - d. New York
  
10. What was the Great Migration?
  - a. Protest against British taxes
  - b. Movement between 1915 and 1940s of millions of African Americans to the North in search of work and fair treatment
  - c. Movement of people, animals, plants, diseases and ways of life between the Eastern Hemisphere and Western Hemisphere following the voyages of Columbus
  - d. Forced march of 15,000 Cherokee from the southeastern United States to Indian Territory in Oklahoma
  
11. Which people moved west from Quebec and Montreal building trading posts and missions along the St. Lawrence River and the Great Lakes?
  - a. Spanish
  - b. Dutch
  - c. French
  - d. English
  
12. What town became known as a “cow town” because of its location along the railroad?
  - a. Seattle, Washington
  - b. Richmond, Virginia
  - c. Houston, Texas
  - d. Abilene, Kansas
  
13. How did many people believe it would be best to link the East and West?
  - a. Oregon Trail
  - b. Erie Canal
  - c. El Camino Real
  - d. Transcontinental Railroad

14. What did James Oliver invent to help cut through the tough prairie sod?
- a. Reaper
  - b. Tractor
  - c. Steel plow
  - d. Rake
15. Which area of early American settlement contained open grasslands that were good for sheep and cattle ranching?
- a. New Mexico
  - b. Pennsylvania
  - c. Massachusetts
  - d. New Hampshire



16. What vast region of dry grasslands did the United States government offer free to settlers if they were willing to start new farms?
- a. Upper Midwest
  - b. Great Plains
  - c. Northeast
  - d. Southwest
17. According to Churchill, which activity was allowed to happen by the valiant efforts of the British Army?
- a. Farmers were allowed to harvest crops
  - b. Construction of a transcontinental railroad was completed by French troops
  - c. Troops were removed from London
  - d. Graveline water lines were flooded and held by French troops
18. Who was the leader of Belgium during the early years of World War II?
- a. Czar Nicholas
  - b. Prime Minister Mussolini
  - c. King Leopold
  - d. General Charles De Gaulle
19. Which organization did Parliament give the British military permission to put down their activities with a strong hand until they had been effectively stamped out in London?
- a. Fifth Column
  - b. Ku Klux Klan
  - c. Third Reich
  - d. Canadian Mounties
20. What country does Churchill refer to as the “New World”?
- a. Spain
  - b. United States
  - c. Russia
  - d. Mexico

**"So, first of all, let me assert my firm belief that the only thing we have to fear is fear itself."**

21. Who is credited with this famous quote?

- a. John Kennedy
- b. Lyndon Johnson
- c. Franklin Roosevelt
- d. Donald Trump

22. In his progress toward a resumption of work, what was one of Franklin Roosevelt's two required safeguards against a return to the evils of the old ways?

- a. Required membership in unions
- b. Increased number of educational facilities
- c. Improved sanitary conditions in factories
- d. Strict supervision of all banking and credits and investments

23. What did Franklin Roosevelt use as his foreign policy?

- a. Good Neighbor
- b. Dollar Diplomacy
- c. Big Stick
- d. Strict Isolation

24. According to the Eisenhower World War II memo, how will we be able to turn the tide?

- a. Fewer soldiers were able to enlist
- b. Home fronts have given the military an overwhelming superiority in weapons and munitions of war
- c. Reduced amount of food and clothing for troops
- d. Inability of manufacturers to produce tanks

- **Separates the Sinai Peninsula from the rest of Egypt**
- **One of the world's most important waterways**
- **Ships could avoid traveling all the way around Africa**

25. What geographic feature is being described?

- a. Suez Canal
- b. Panama Canal
- c. Erie Canal
- d. Sweetwater Canal

26. Which mountain peak in Nepal attracts thousands of climbers and hikers each year creating a growing tourist industry?

- a. Mount McKinley
- b. Mount Kilimanjaro
- c. Mount Kosciuszko
- d. Mount Everest

27. \_\_\_\_\_ is a European nation, because no part of it is more than 85 miles from the sea, that has one of the largest shipping fleets in the world.

- a. Chile
- b. Australia
- c. Greece
- d. Nigeria

28. What did the Chinese build in order to provide protection from invaders from the North?

- a. Demilitarized Zone
- b. Great Wall
- c. Berlin Wall
- d. International Date Line

?

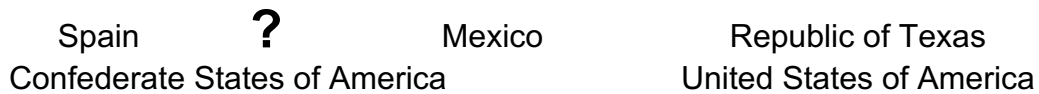
**Ready supply of natural resources to make and run machinery**  
**Plentiful supply of raw materials needed to make cloth**  
**A source of people who could be hired to work the machines**

29. What title finishes the chart?
- a. Green Revolution
  - b. Cascade Revolution
  - c. Bengal Revolution
  - d. Industrial Revolution
30. France's well-developed economy relies on agriculture and manufacturing. Most of its people, however, work in service industries. What are service industries?
- a. Home- or village-based industry in which family members supply their own equipment to make goods
  - b. Industries such as banking, commerce, communications and tourism
  - c. Industry that produces goods such as clothing, shoes, furniture and house-hold products
  - d. Industry that produces computers and other kinds of electronic equipment
31. Why is tapping the natural resources of Siberia very difficult?
- a. Harsh, cold climate
  - b. Close to ports
  - c. Dry, desert conditions
  - d. On a major trade route
32. Which African nation is home to the Serengeti National Park, that attracts many eco-tourists to view its natural wonders?
- a. Argentina
  - b. Pakistan
  - c. Tanzania
  - d. Canada
33. What organization does Saudi Arabia belong to that by increasing or reducing supply they are able to influence world oil prices?
- a. European Union
  - b. North Atlantic Treaty Organization
  - c. Organization of Petroleum Exporting Countries
  - d. Warsaw Pact
34. \_\_\_\_\_, a Caribbean Island, contains mines of bauxite, a mineral used to make aluminum.
- a. Italy
  - b. India
  - c. Angola
  - d. Jamaica
35. Where is the center of operations for our country's piloted space flights?
- a. Cape Canaveral
  - b. Johnson Space Center
  - c. Space X
  - d. Lackland Air Force Base



36. Who turned his hobby of building computers into a business selling personal computers?
- a. Michael Dell
  - b. Leland Snow
  - c. John Lomax
  - d. David McComb

### Six Flags Over Texas



37. Which flag is missing on the chart?
- a. France
  - b. Poland
  - c. England
  - d. Germany
38. What mission was so important to the community of San Antonio that it became known as the “Queen of the Missions”?
- a. Corpus Christi de la Isleta
  - b. San Jose y San Miguel de Aguayo
  - c. San Gabriel Archangel
  - d. San Francisco de los Tejas

39. Who is the Texas political leader in the picture?
- a. George Bush, Commissioner of General Land Office
  - b. Sid Miller, Commissioner of Agriculture
  - c. Ken Paxton, Attorney General
  - d. Glen Hegar, Comptroller of Public Accounts



- Mary Long Keel
  - Bert Richardson
  - Kevin Yeary
  - Michael Keasler
40. In which Texas political office do these individuals serve?
- a. Supreme Court of Texas
  - b. Texas Railroad Commission
  - c. State Board of Education
  - d. Court of Criminal Appeals

**UNIVERSITY INTERSCHOLASTIC LEAGUE  
2020-21 A+ SOCIAL STUDIES  
SPRING DISTRICT — GRADES 5 & 6**

**Answer Key**

- |       |       |
|-------|-------|
| 1. B  | 21. C |
| 2. C  | 22. D |
| 3. D  | 23. A |
| 4. A  | 24. B |
| 5. D  | 25. A |
| 6. B  | 26. D |
| 7. A  | 27. C |
| 8. C  | 28. B |
| 9. A  | 29. D |
| 10. B | 30. B |
| 11. C | 31. A |
| 12. D | 32. C |
| 13. D | 33. C |
| 14. C | 34. D |
| 15. A | 35. B |
| 16. B | 36. A |
| 17. D | 37. A |
| 18. C | 38. B |
| 19. A | 39. C |
| 20. B | 40. D |



# Storytelling

## EVALUATION SHEET

### INSTRUCTIONS

Please review the instructions for evaluating the performances of the storytelling contestants. The following criteria are of equal importance to evaluating contestants. Terminology used is only intended to help the judge identify criteria for determining a winner. Please make your comments using language understandable to the contestant. Students and instructors appreciate constructive narrative comments. Please do not confer with other judges before ranking students. Judges' decisions are an individual responsibility.

**Speaker Number** \_\_\_\_\_

**Speaker Name** \_\_\_\_\_

**Round**  Prelims

**Section** \_\_\_\_\_

Finals

Yes No **Did the contestant communicate effectively with the audience?**

Yes No **Did the contestant command attention?**

Yes No **Did the contestant tell the story with ease?**

Yes No **Did the contestant exhibit enthusiasm?**

Yes No **Did the contestant utilize facial expressions, vocal variety and characterization?**

Yes No **Did the contestant make good eye contact?**

Yes No **Did the contestant use good posture?**

Yes No **Did the contestant speak clearly?**

Yes No **Did the contestant use gestures effectively?**

### CONSTRUCTIVE COMMENTS FOR THE CONTESTANT:

*Judge's signature* \_\_\_\_\_



Storytelling Contest  
Invitational District 2020-21

“Making Music”  
Major Elements of the Plot  
Grades 2 and 3

**Directions to Contest Directors:** Give a copy of this sheet to each judge before the contest begins.

**Directions to Judges:** Each speaker must include at least one of the following elements from the story in his or her presentation. Words may vary. It is up to the judge to decide if the speaker has included one of the elements.

1. Dennis loves to play music loud, but his family and neighbors keep telling him to be quiet.
2. Dennis walks over to his friend Billy's house to see if Billy had any music instruments, but he didn't. So, they went to Clara's house. She only had a drum with a hole in it.
3. They went to Karen's house and Joshua's house. Each friend did not have an instrument or at least one that worked. Then, Dennis decides they can make their own instruments.
4. They gathered supplies from their houses and met back at the park. They twisted rubber bands onto Joshua's guitar and found a stick to make the hole bigger on Clara's drum. They started to play music as loud as they can and then decided to have a parade.
5. When the ice cream truck man arrived, he gave the band popsicles. They then decided to play their instruments even louder.



# Storytelling Contest

Invitational 2020-21

## “Making Music”

Grades 2 and 3

by Kathryn Lay

Dennis turned the radio on as loud as he could. He loved music. And he loved it loud.

“Turn down the music, please!” His father shouted.

“It’s too loud!” his sister yelled.

Dennis turned off the music and went to the kitchen. He grabbed a banana for a snack. While he ate, he picked up a wooden spoon and beat it against the wall. He drummed it against pans on the stove. He tapped it on the refrigerator door.

“No more loud tapping, please,” his Mom said.

“Grrr,” his puppy Max growled.

Dennis went out to the backyard. He swung a moment, then saw his father’s saw beside the new fence. He had learned how to hit it just right with a hammer to make a loud noise.

“Stop that sawing, please,” his neighbor on the right shouted.

“It’s too loud!” the neighbor on the left yelled.

Dennis sighed. He loved making music. Especially loud music. But no one seemed to like it loud.

He walked across the street and knocked on Billy’s door. Billy opened the door.

Billy invited him inside. “Do you want to play in my room?”

Dennis asked. “Do you have any musical instruments?”

Billy tapped his finger against his nose. He closed his eyes as if thinking hard. Then he shook his head.

Dennis said, "I'm on the hunt for something musical. Everyone says mine are too loud."

They walked down the street to Karen's house. Dennis asked Karen if she had any musical instruments. She did not have any either.

Together they went to each of their friend's houses. Clara had a drum with a hole in it. Joshua had a guitar with no strings.

Dennis knew that Mr. Stoker at the Music Notes store had lots of instruments. But he only let people play them who wanted to buy one.

"What if we just make our own?" Dennis said.

The others smiled.

They went back to each house. They found Clara's broken drum and Joshua's stringless guitar. Karen grabbed a paper towel roll and Billy found two old hubcaps in his garage.

"My dad said I can have these," Billy told them.

Dennis ran into his room. He grabbed his brother's toy hammer that squeaked and a metal pan from the kitchen. He found rubber bands in his father's office.

The friends went to the playground. Dennis twisted the rubber bands onto Joshua's guitar. He found a stick and made the hole bigger on Clara's drum.

"Bang the stick around the inside of the drum, on the wood," Dennis said.

Everyone clapped when she did.

Karen puffed out her cheeks and sang into the paper towel roll.

Billy crashed the hubcaps together like cymbals.

Dennis banged the squeaky hammer onto the metal pot. They laughed at the silly sound.

"Now what do we do?" Billy asked.

Dennis stood and hammered the pot again. He found a beat he had heard on the radio. He walked around his friends marching and playing.

“We have a parade, of course.” Dennis said.

Everyone lined up behind him. They began to play the rubber band guitar, the drum with the stick, the hub cap cymbals, the paper towel roll and the squeaky hammer and pot.

They marched and played around the swings, past the slide, and under the treehouse.

Soon there was a crowd of kids waving and cheering.

“Louder!” someone shouted.

Dennis hit the pan louder.

When the ice cream truck drove by, the ice cream man played his music loud and waited in the parking lot.

“That’s a great band you have there,” he said. “I think the players will all have popsicles!”

Dennis and his friends ran to the truck. They chose their popsicles and fell into the grass.

“I bet they heard us all over the park,” Clara said.

“No,” Dennis said. “We weren’t loud enough.”

They lined up again and played their homemade instruments. Louder.



Storytelling Contest  
Invitational 2020-21

“Zoo Paintings”

Major Elements of the Plot

Grades 2 and 3

**Directions to Contest Directors:** Give a copy of this sheet to each judge before the contest begins.

**Directions to Judges:** Each speaker must include at least one of the following elements from the story in his or her presentation. Words may vary. It is up to the judge to decide if the speaker has included one of the elements.

1. Michael was excited to be at the zoo for his first day of the zoo painting class.
2. The first stop the class made was to the elephants. The teacher, Mr. Seabolt, said they would have ten minutes at each stop for the students to paint.
3. He looked at the elephant and thought how much paint he would need to paint it. Then, he had a great idea.
4. He used his great idea to paint the elephant, the rhinoceros, lions, eagles, alligators, and last a Toucan. He heard his other classmates talk about how hard it was to paint an animal so fast.
5. When it was time to show each other their paintings, the other students said Michael did not paint the animals. His teacher told them to look closely, and they realized Michael painted each animals' nose. For next week's class, Michael thought how fun it would be to paint feet.





# Storytelling Contest

Invitational 2020-21

## “Zoo Paintings”

Grades 2 and 3

by Kathryn Lay

Michael looked up at the big gates that led into the zoo. It was his favorite place to visit. He loved to go with his parents and grandparents. Sometimes he went with his best friend Kylee or his cousin Kurt.

But today was the most exciting of all.

“Everyone, please take your paper and paints with you through the side gate,” Mr. Seabolt said.

Michael picked up his big red bag. Inside was a large pad of blank paper and his new watercolor set. He followed the zoo schoolteacher and other kids inside. Today was the first day of the zoo painting class.

“The first stop will be at the elephants,” the teacher said. “Line up in front of the easels that are side by side. We will have 10 minutes at each stop for you to do your paintings.”

Michael put his spiral art pad on one of the stands in front of the elephants. He pulled out his bright paint set and a little plastic jar of water.

He dipped his brush into the water, then stared at the elephants in front of him. They were big. They were giant. It would take a lot of paint.

After a moment, he had an idea. A great idea.

He dipped the wet brush into a square of dry paint until it was wet enough. Then he began to paint. The others around him were laughing and talking. They talked about how big the elephants stood. Some of the kids said they could not fit an elephant on their paper.

When the teacher told everyone it was time to stop, they took their supplies and followed him around the corner.

“These rhinoceros should be interesting to paint,” Mr. Seabolt said.

Michael smiled as he began to paint. The rhinoceros in front of him was almost the same color as the elephant. But it looked much different. He finished his painting before the teacher told them to stop.

Before anyone could look at it, he closed the tablet.

They stopped to paint the lions and eagles. They crowded around the glass around the pond full of alligators.

Michael listened to the others talk about how hard it was to paint the animals so fast. He smiled. Soon they would go back to the zoo classroom and show their paintings. He bet no one had the same idea as he had.

The last animal they came to was a beautiful black bird with a bright colored beak. He was called a Toucan.

“How many can? Not one can. Not three can. But Toucan,” Michael said as he painted.

The other kids laughed.

Soon they were walking back to the classroom. He could not wait to show everyone his paintings.

“That was really hard to do,” a girl walking beside him said. “I had to paint fast. I don’t think mine looks very good. My elephant looks like a ball. And my alligator looks like a pickle with legs.”

Michael nodded. It would be hard, unless you had a great idea.

“Alright, if everyone would stand in a circle and hold up their elephant picture, please,” the teacher said.

Michael opened his notebook to the first page. He looked at the other paintings. They were all different.

“Hey, what is that?” a kid asked, pointing at Michael’s picture.

Everyone looked. They laughed.

Michael said, “It is my elephant picture.”

The girl he talked to earlier said, “That’s not an elephant.”

Then they showed their rhinoceros pictures.

“Hey, that is not a rhinoceros,” someone said to Michael.

By the time they finished showing all the pictures, everyone agreed that Michael’s paintings were not like theirs.

“Where are the animals?” someone asked.

Michael pointed to his elephant. It was long and thin and gray with wrinkles. Then he pointed to his rhinoceros. It was light gray with a pointed white bone standing up. His lion picture was pink with thin whiskers. His eagle was a curved orange piece in the middle of the paper. His alligator was two round dark spots on top of green scales.

“And this is my toucan,” Michael said.

Mr. Seabolt smiled. “I think I understand. Look closely at each of Michael’s paintings everyone.”

The other students moved closer to Michael’s drawings. They looked at each one and whispered together.

“Those are noses,” someone said.

Michael nodded. “I was afraid I didn’t have the room on my page or the time to paint the whole animal. So, I painted the same part of each one.”

The toucan’s bright beak was everyone’s favorite.

Michael put away his paper and paints. Next week, everyone said they were painting noses.

Michael smiled. He had a great idea. He thought how fun it would be to paint feet.



Storytelling Contest  
Fall/Winter District 2020-21

“A Kite Tail”

Major Elements of the Plot

Grades 2 and 3

**Directions to Contest Directors:** Give a copy of this sheet to each judge before the contest begins.

**Directions to Judges:** Each speaker must include at least one of the following elements from the story in his or her presentation. Words may vary. It is up to the judge to decide if the speaker has included one of the elements.

1. Carla and Rosa are at the park looking at kites. They decide to enter the kite show this year and go to Carla's house to start planning the kite they will make.
2. They look at the kite supplies from all of the kites that Carla's Mom has used over the years. Carla feels bad that she never helped her Mom with the kites before.
3. Carla decides to make a kite with kite tails. The next day, she and Rosa test it out, but it does not fly.
4. Carla's mother offers to help and tells Carla that sometimes her Dad helped her.
5. The next day, Carla's parents drove her and Rosa to the park for the festival. They ended up winning the "most unusual kite" award. Her Mom said she would frame the kite in her office as their first kite together.



## Storytelling Contest

Fall/Winter District 2020-21

### “A Kite Tail”

Grades 2 and 3

by Kathryn Lay

Carla pulled her knees to her chest. She watched the bright kites dancing in the sky. Her favorite was the one that looked like a dragon. It was green and had a red banner coming from its mouth.

“Look at the dragon,” she told her cousin, Rosa. “It looks like it is breathing fire.”

“Oh, and the ship looks like it is sailing on the clouds,” Rosa said.

Every year the town had a big kite show. This year’s was just a week away. At the end of the show, there were ribbons given for different kinds of kites.

“We could enter this year,” Carla said. “We are old enough now.”

Rosa shook her head. “I don’t think we have time to build a kite and practice.”

Carla jumped up from the cool grass. “I just know we can do it. We just need a plan. Let’s go to my house. Mom has lots of supplies from last year’s show. And she said he didn’t have time to enter this year.”

They ran across the park and two blocks to Carla’s house.

Carla told her parents what she wanted to do. They pulled out a box of material and sticks and ribbon from the garage.

“Let’s go to my room,” Carla said. “We need to plan our kite first before we can make it.”

They grabbed bottles of juice and hurried to Carla’s room. All around the room were pictures of her mother’s kites she had made over the years. All of her kites were winners. An elephant, a butterfly, and even a cat with a long black tail.

“I hope you have learned kite making from your mom,” Rosa said.

Carla didn't want to admit she had never helped her mother with the kites. She used to think it was boring. But now, the year her mom was too busy to enter the kite festival, Carla really wanted to enter. And win.

They sat on Carla's bed, drank juice and talked about kite ideas.

"It needs to be something that would have a cool tail," Carla said. "The judges always like kites with fancy or fun tails."

"Maybe we should just make a tail," Rosa said with a laugh.

Carla stared at her friend. "That's it!" she shouted.

They worked on a special kite idea until Carla's mother shouted, "Rosa, your Mom needs you to come home."

Rosa left and Carla went into the kitchen to help her mother with dinner.

She took a deep breath. "We are making a kite for the festival."

Her mother turned and smiled. "I'm glad you are taking over this year. I've always wanted you to help me."

Carla shrugged. She wished she had helped her mom with the kites. But she wanted to plan this one herself.

Later, in her room Carla drew pictures of long kites that looked like tails. They looked silly. How could you have a kite that was just a tail? How would it fly?

She studied the pictures of her mother's kites. They all had great tails. But they were attached to great kites.

"Wait, what if...?"

She grabbed her notebook and started to draw and make notes. When she was done, she grinned. Perfect. It was a perfect plan.

The next day she and Rosa cut out long strips of cloth. They were different colors. Some were stripes and some were polka dots. One had little frogs on it. Carla laughed at the idea of flying frogs.

They sewed all the tails together to shape them like a kite and attached wood sticks to make the frame. The bottom of the tails hung below the kite.

"That is a special kite," Rosa said. She held it up as Carla attached the string to fly it high into the sky.

They hurried to the park to practice. There were a few other people flying kites.

Rosa took the kite and backed away from Carla. They waited for a good gust of wind. Then Carla told Rosa to let go of the kite. She watched as Rosa threw it up into the air.

And it crashed to the ground.

“Uh oh,” Rosa said.

They tried again and again, but the kite did not fly.

Carla frowned. What did she do wrong? They walked home. Carla saw her mother in her office.

She sat down and told her mother about the problem with the kite. “I’m sorry, I really wanted to do this all by myself like you did.”

Her mother leaned forward. “We all need help sometimes. Your dad helped me with the kites when I needed it.”

Carla explained everything she did with the kite and held it out to her mother. Her mother smiled. “Very nice, Carla. Look at the tails of your tail kite.”

Carla stared at it and thought about her mother’s kites. She smiled. “Thanks for the hint, I know what to do. Can you help me?”

Carla and her mother worked the rest of the day on kite. The next day was the day of the kite festival.

Carla and her parents picked up Rosa and drove them to the park. Carla showed Rosa the kite.

“Too bad we don’t have time to test it first,” Rosa said.

Carla nodded. People were spread out around the park, ready to send their kites into the sky. Carla touched the extra long tails she and her mother had added. Tails from her Mom’s winning kites. She held the kite out to her mom.

“You should fly it,” Carla said.

Her mother shook her head. “No, this is your kite. You and Rosa had a great idea. I just helped a little.”

Carla and Rosa found a spot and got ready. Rosa held the kite as Carla unraveled the string just a little. When the judge's whistle sounded, Rosa tossed the kite into the wind.

Carla began to let out more string as the kite rose. She backed up and moved her arm side to side. The kite climbed higher. Its bright tails waved and wiggled.

Carla's parents clapped their hands. Rosa jumped up and down.

"It's working," Carla shouted. She watched their kite dance in the wind.

When the competition ended, and the kites were on the ground, Carla and Rosa waited for the names of the winners.

Carla listened for her and Rosa's name. They didn't win prettiest kite or highest-flying kite. They didn't win for biggest or smallest.

Then the judge said, "And for our most unusual kite today, the winning kite is by Carla and Rosa Rodriguez for their Kite of Tails."

Carla screamed. Rosa shouted. Carla's parents clapped.

Carla gave the kite to her mother. "For your winning kite collection."

Her mother smiled. "I will frame it and hang it in my office. Our first kite together."

Carla held her trophy and smiled. It was time to start planning for next year's kite.





Storytelling Contest  
Fall/Winter District 2020-21

“The Jeweled Box”  
Major Elements of the Plot

Grades 2 and 3

**Directions to Contest Directors:** Give a copy of this sheet to each judge before the contest begins.

**Directions to Judges:** Each speaker must include at least one of the following elements from the story in his or her presentation. Words may vary. It is up to the judge to decide if the speaker has included one of the elements.

1. Kyran is excited that today is the day he goes garage sailing with his Mom and Dad. Kyran's parents let him invite his friend Chris along too.
2. When they go to the garage sales, Chris is able to find gifts for other people, but Kyran isn't able to find a gift for himself. He does not have any interest in finding gifts for other people.
3. Kyran feels defeated that he can't find a gift for himself. His Dad said they have one more sale left, and it is supposed to be a big one.
4. At the last sale, Chris found a treasure box covered with shiny stones and colorful jewels that Kyran really liked. Kyran feels defeated that Chris found the box and not him. Before they dropped Chris off at his house, Chris told Kyran he got the treasure box for him.
5. Kyran starts thinking what he would do with the box. He thinks it is the perfect size for a gift. Then, he asks his Dad to drop him off at his Grandma's house for a surprise visit.



# Storytelling Contest

Fall/Winter District 2020-21

## “The Jeweled Box”

Grades 2 and 3

by Kathryn Lay

It was the day Kyran had been looking forward to all week.

Saturday garage sale day with his Mom and Dad. This time, they said he could invite his best friend Chris to go along.

Every first Saturday of the month, Kyran and his parents drove around town looking for sales. It was better than going to the mall. You never knew what you would find at a garage sale or yard sale.

Once he found a dinosaur that had eyes that lit up. It opened its mouth and roared like something in a movie. Another time, he found the biggest box of connecting cubes he had ever seen. He built castles and robots and anything he could imagine.

“Is it time to go yet?” he asked his Mom.

She smiled. “Almost.”

He followed his dad to the car and helped him put boxes in the back for the treasures they would find.

“Is it time to go yet?” he asked his Dad.

“Almost,” his father said.

Kyran pulled out his garage sale wallet and counted the money. Five one-dollar bills to spend any way he wanted.

He heard someone whistling and turned to see Chris walking backwards toward him. Kyran laughed.

His mom and dad laughed.

Kyran grinned at Chris, then asked his parents, “Is it time to go yet?”

“Yes!” they both said.

Soon they were stopping at the first sale. Kyran and Chris went straight to a table of toys.

“Just little kid stuff,” Chris said, poking at a stuffed bear.

Kyran nodded. He was looking for something exciting. Maybe something to add to his pewter animal collection or his collection of patches. Last time he found a patch with a rocket ship on it.

At the next sale, Chris bought a big plastic ball with red polka dots all over it. He balanced it on his head.

“That’s weird looking. It’s not a baseball or football or soccer ball,” Kyran said.

Chris grinned. “My little sister loves polka dots.”

Kyran was still looking for something exciting for himself. He wasn’t spending his money on someone else.

His parents found an old shelf at the next sale. Chris got a squeaky toy for his dog. Kyran didn’t find anything there or the next three sales. Chris bought a shiny pin for his mom and a broken watch for his dad to repair.

Kyran folded his arms and plopped into the car. “This isn’t fun anymore. I have not found one thing that I would like to have.”

They stopped for sandwiches to take to the park. Kyran took a big bite of his turkey and cheese sandwich. His parents talked about all the things they had bought that day. He watched as Chris counted the money he had left.

Chris held up his last dollar.

Kyran still had all of his money. But he felt sure he would find something for himself instead of buying for other people.

“We have one more sale we want to go see,” his father said. “It’s supposed to be a big one. Maybe you can find something that you like there.”

Kyran shrugged. Only one more sale left. He had been waiting all week for this day.

“Wow!” Chris shouted when they drove up to the big old house.

Kyran whistled. The whole driveway and front yard were full of tables and boxes to dig through. He jumped out of the car and ran to the first table. The yard was

crowded with people. He peeked around people and dug through boxes. There was nothing to add to his collection.

“Look at this,” Chris said. He held out a big box covered in shiny stones and colorful jewels. It was made of wood and had a lid that opened. In the front was a lock that looked like a pirate skull.

Kyran gasped. “It’s a treasure box. A real treasure box.” He touched the lock. “What’s inside?”

Chris shook his head. “Nothing. And the lady said I could have it for one dollar.”

The jewels sparkled in the sun. The stones seemed to wink at Kyran. “What are you going to do with it?”

Chris grinned. “It’s a secret. A treasure box secret.”

Kyran frowned. He was the one who had invited his friend to go with them that day. And now his friend had found the best thing he had ever seen at a garage sale. He turned and walked back to the car. He didn’t want to look any longer.

When they got back to Kyran’s house, he jumped out of the car and told his friend goodbye.

“Wait,” Chris said. He held out the treasure box. “I got it for you. For your collections.”

Kyran held his breath. He took the box and smiled. “Wow, that is a great gift. I’ve never had a nicer one.”

Chris waved goodbye and ran toward home.

Kyran stared at the box. It would look perfect on his dresser, full of one of his collections.

He could put in his pewter toys or his patches. His grandma gave him a toy dinosaur collection last year on his birthday.

His grandma collected old spoons from around the world. And she loved pretty jewelry with bright colors.

Kyran stared at the box. People were always giving him things. His parents, his grandma, and even his friend.

He rubbed the jewels and stones on the box. It was the perfect size for spoons. It was the perfect size for shiny jewelry. It was the perfect size for a gift.

“Hey Dad, can you drive me to Grandma’s house?” Kyran asked.

His father smiled. “Of course, did you two have plans today?”

Kyran shook his head. “No, it’s a surprise visit.”

He climbed back into the car and put the treasure box on his lap. It was the perfect day.

And he still had five dollars left to take his grandma out for ice cream.



Storytelling Contest  
Spring District 2020-21

“Case of the Missing Socks”

Major Elements of the Plot

Grades 2 and 3

**Directions to Contest Directors:** Give a copy of this sheet to each judge before the contest begins.

**Directions to Judges:** Each speaker must include at least one of the following elements from the story in his or her presentation. Words may vary. It is up to the judge to decide if the speaker has included one of the elements.

1. Brett was having a hard time finding Socks in the house. He checked all the places he thought Socks would be.
2. Socks was Brett’s pet cat that showed up one day on the back porch. The cat liked to spend a lot of time hiding under socks.
3. Brett’s father made him realize that he may have let Socks outside by accident that morning.
4. While searching outside, he believed he had found Socks in the arms of a little boy named Ricky. Brett became confused when he realized that the cat may have looked like Socks, but it wasn’t.
5. After Ricky explained to Brett that his cats name was Mittens, Socks ran to Brett from behind a bush. They realized the cats may have been brothers, and the case of the missing Socks was solved.



## Storytelling Contest

Spring District 2020-21

### “Case of the Missing Socks”

Grades 2 and 3

by Kathryn Lay

Brett could not find his Sock anywhere.

He looked all over his room. He looked in the kitchen under the table. He looked in the living room at the worn spot on the couch.

“Mom, have you seen my Socks?”

His mother shook her head. “No, have you looked in the laundry room?”

Brett snapped his fingers. Of course. It was the best place to find Socks.

He slid into the laundry room. There was a basket full of his clean clothes. But Socks was not in there.

“Where is that cat?” he wondered. His black cat with three white paws loved to hide in the laundry. That was why Brett named him Socks. And because he had white socks on his feet.

Socks just showed up one day on the back porch. They put up signs and a notice in the paper. No one came to say he was their cat.

The scared kitten spent a lot of time hiding under Brett’s socks on his bed or the floor in his room.

Brett’s father walked by. “Did your cat go outside when you rode your bike this morning?”

Brett gasped. He remembered he had left the front door open when he ran back inside for his helmet. And he had not seen Socks since then. What if the cat ran away or was lost somewhere?

He ran outside and called for his cat. Socks was not under the bushes. He was not up the tree. Brett did not see him up or down the sidewalk.

His heart pounded. Socks was lost somewhere.

He walked to the end of the street, calling his cat's name. He walked around the corner to the next street. He saw a white cat sitting on a rock. He saw a beagle walking with his owner.

Then he saw the boy sitting on a porch. He was holding a cat. The cat was black with three white paws.

"Socks!" Brett yelled. He ran to the front yard. "Thanks for finding my cat."

The boy frowned. "This is my cat. His name is Mittens."

Brett shook his head. He frowned. He knew the boy was holding Socks. "My cat is black with three white feet. That cat is black with one, two, three white paws."

The boy hugged the cat closer. "My cat is black with three white paws. His name is Mittens."

Brett and the boy stared at one another. Brett felt sorry for the kid. He would be sad when Socks jumped and ran into Brett's arms.

Brett called his cat's name. He bent down and held out his arms. The cat stared at him. He did not run. He did not jump into Brett's arms.

Brett walked closer. The cat hissed. Brett could not believe Socks was acting so strange.

"Come on, Socks," he said. "It's time to go home."

The cat hissed again. Brett backed away. Why was Socks so angry at him? And why was he sitting in a strange kid's lap?

He heard a loud meow. From behind a bush, another cat walked out. The cat was black with three white paws.

With another meow, the new cat ran across the yard and rubbed against Brett's legs. Then he jumped into Brett's arms.

"Who's that?" the boy asked.

Brett smiled. "This is Socks."

He looked at his cat. His two front paws and one back one were white. The cat the boy held had two white paws in back and one in front.



Brett asked the boy how long he had Mittens.

“About six months,” the boy said. “He meowed under my window for two days and then I kept him.”

Brett had an idea. He carried Socks close to Mittens and put him down. The two cats stared at each other a moment. Then they purred and sat down beside one another.

“I think they are brothers,” Brett said.

They watched the cats play with blades of grass. Brett said, “I’m Brett.”

“I’m Ricky,” the boy said.

They played with the cats for a while. Brett picked up Socks to go home.

“Can Socks come play with Mittens again?” he asked.

Ricky grinned. “That would be great.”

Brett waved goodbye and carried Socks home.

“Well, you had an adventure and found your brother,” he told the cat. “I’m so happy I solved the case of the missing Socks.”

Socks purred.

Brett laughed. “And, made a new friend.”

He wondered if Socks’ brother liked to hide in a basket of mittens.



Storytelling Contest  
Spring District 2020-21

“The Party Mystery”  
Major Elements of the Plot

Grades 2 and 3

**Directions to Contest Directors:** Give a copy of this sheet to each judge before the contest begins.

**Directions to Judges:** Each speaker must include at least one of the following elements from the story in his or her presentation. Words may vary. It is up to the judge to decide if the speaker has included one of the elements.

1. It was the day of Casey’s birthday party, and she was very excited for her friends to arrive.
2. Casey could not stop thinking about why her best friend Stella was not at her birthday party.
3. The backyard was decorated and filled with her friends, except for Stella.
4. Casey and her friends played games. The last game was a mystery. Casey was given clues that would lead her to her last present.
5. Casey went through all of the clues and was surprised to learn that Stella was her gift at the end.



## Storytelling Contest

Spring District 2020-21

### “The Party Mystery”

Grades 2 and 3

by Kathryn Lay

Casey put down her newest book, *The Bow Wow Mystery Club*. Her aunt sent it for Casey’s birthday.

“I’m running out of room on my bookshelf,” she said. She squeezed the book in with her other mystery books.

It was time to put on her new clothes. Soon the backyard would be full of her friends. She had been planning her birthday party for weeks.

“Is anyone here yet?” she yelled downstairs.

“No,” her father said.

Casey frowned. Stella, her best friend was always early. She should have come early to help with the party.

She dressed and ran downstairs. The doorbell rang.

“Happy birthday!” Gina and Tina shouted when they walked inside.

Casey giggled. Gina and Tina looked and acted like twins. They held out a gift bag with balloons all over it.

Casey took her friends outside. The backyard was filled with balloons and streamers. The picnic table had bright green plates and cups on it. Her father waved at him from the grill. Casey took a big sniff of the food. All her favorites. Hot dogs. Corn on the cob. Grilled carrots.

Soon the back yard was full of her friends.

Every time someone walked into the yard, Casey expected it to be Stella. But she never came, even when Casey’s mother said it was time to start games.

Casey joined in the first game of tag. But she kept thinking about Stella.

She laughed when her Uncle Roger did his best magic tricks. But she kept looking for Stella.

Her mother clapped her hands. “Everyone, our last game is special for Casey.” She held up a plastic jar. A piece of folded paper was inside.

Casey took the jar and opened it. Her friends stood around her as she read the note.

“A party for Casey would not be fun without a mystery. Here is your first clue,” Casey read.

She grinned. A party mystery!

She read the clue to everyone. “Your mom loves to play with dirt. She piles it high in colorful places. Your next clue is inside the blue place.”

Casey looked at her mother. Her mom played in dirt? Did she have a secret sandbox in the yard? A blue one?

She walked around. Her friends followed her. Then Casey snapped her fingers and went to the corner of her mother’s garden. There were many sizes and colors of pots of flowers. There were three pots that only had dirt inside. One pot was blue.

Casey dug through the dirt in the blue pot. She pulled out a plastic bag with a note inside. She opened the paper and read:

“Inside where the little beaks peck, wiggle your fingers up, wiggle them down, wiggle them all around.”

Casey stood and looked around the yard. What could it be?”

“This is exciting,” one of her friends said with a giggle.

Casey nodded. If only Stella was there to help her.

She walked back and forth, reading the note again. She looked at her father who shrugged. She looked at her mother who smiled.

Then Casey looked up. At the low branch on the big tree by the fence.

“Ah ha!” she shouted.

She stood on tiptoe and reached her hand into the bird house. The birds had beaks. That’s what their mouths were called. And they pecked inside the birdhouse for their food.

She wiggled her fingers all around inside until she felt paper.

“Here it is,” she said. “I found it!”

The others stood around her as she read. “The prize is near, the party gift is yours. Come in or come out. The end is there.”

Casey tapped her finger on her nose. Sometimes people who solved mysteries had to think hard. She thought and thought. Stella would have laughed if she were there.

“I’ve got it!” she yelled.

Casey ran across the yard to the gate. People came in the gate to get into the yard and out of it to leave the yard.

Casey swung open the gate.

“Surprise!”

“Stella!” Casey shouted. She grabbed her best friend’s arm and pulled her into the yard.

Everyone cheered. Casey led Stella to the table where hot dogs and corn filled trays.

“Did you like my gift?” Stella asked.

Casey squirted mustard on a hot dog. “It was the best. We had a birthday mystery together.”

Soon Casey was opening the gifts from her parents and friends. But her favorite gift was something she would never forget. It did not fit on her shelf or sit on her bed or hang in her closet.

It was a memory in her head that made her smile.

“Smile,” her father said, holding his camera at the table. “Say cheese!”

Casey moved closer to Stella. They both smiled and shouted, “Mystery!”