2019-2020

This booklet contains practice tests and rules for
Art (grades 7-8)
Calculator Applications (grades 6-8)
Chess Puzzle (grades 6-8)
Dictionary Skills (grades 7-8)
Editorial Writing (grades 7-8)
Impromptu (grades 7-8)
Listening Skills (grades 7-8)
Maps, Graphs & Charts (grades 7-8)
Mathematics (grades 6-8)
Number Sense (grades 7-8)
Ready Writing (grades 7-8)
Science I and Science II (grades 7-8)
Social Studies (grades 7-8)

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

JUNIOR HIGH ACADEMIC STUDY MATERIALS BOOKLET

www.uiltexas.org/aplus

UNIVERSITY INTERSCHOLASTIC LEAGUE

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

CONTESTANT NUMBER:

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

*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.*

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._____   _____

1. _____ is an example of a painting created with tempera.

2. Which of these paintings would you expect to have the smoothest surface?
    a. *Kaaterskill Falls*
    b. *Pansies in Washington*
    c. *Mademoiselle Boissière Knitting*
    d. *Keelmen Heaving in Coals by Moonlight*

3. In *Vase of Flowers with a Curtain*, the _____ and _____ represent resurrection and eternal life.

4. The artist added visual interest in *The Coast at Beverly* with
    a. a sailboat.
    b. visible brushwork.
    c. fall leaves.
    d. small human figures.

5. Which of these elements is least important in *Synchromy in Purple Minor*?
    a. color
    b. line
    c. perspective
    d. shape

6. Clear, crisp lines are most important in
    a. *The Adoration of the Christ Child.*
    b. *Banks of the Seine at Médan.*
    c. *Ceres (Summer).*
    d. *Nature Abhors a Vacuum.*

7. In *Tugboat on the Seine, Chatou*, the green color in the trees is contrasted with the complementary color of _____ in the tugboats.

8. Techniques of showing perspective by leaving out details and using paler colors are called
    a. scientific.
    b. atmospheric.
    c. linear.
    d. none of the above

9.   To keep viewers moving throughout the image in *Cardinal Bandinello Sauli, His Secretary, and Two Geographers*, the artist used rhythms of
    a.   texture.
    b.   shape.
    c.   line.
    d.   color.

True/False

10.   Contrasts of light and dark are important in *Marchesa Brigida Spinola Doria*.

11.   We are drawn quickly into *Lady at the Paris Exposition* by the woman's direct gaze at us.

12.   *Abraham Leading Isaac to Sacrifice* and *The Departure of the Boatman* would both fit into the same subject category.

13.   A line of shadow falling across the tallest building in *View of the Dogana and Santa Maria della Salute* adds liveliness to the scene.

14.   The boy pictured behind the musician in *The Rommel-Pot Player* balances the composition.

15.   Texture and perspective are more important than line and shape in *The Musician*.

<div align="center">

Art History

</div>

16.   Which of the following is <u>not</u> a characteristic common in Neoclassical painting?
    a.   playful, lighthearted mood
    b.   smooth, polished canvas
    c.   grand themes from history and legend
    d.   strongly drawn lines

17.   John Marin first became famous for working with _____ paints.

18.   Which of these portraits was painted by a British artist?
    a.   *The Skater (Portrait of William Grant)*
    b.   *Marchesa Brigida Spinola Doria*
    c.   *Mrs. Richard Hogarth*
    d.   all of the above

19.   _____ was one of the leading American artists who painted in the Impressionist style.

20. Everett Shinn first earned his living as
    a. an engraver.
    b. a newspaper reporter.
    c. an architect.
    d. a boxer.

21. Which work was painted later, *Solitude* or *Kaaterskill Falls*?

22. Which of these artists is best known for painting genre scenes?
    a. Ingres
    b. Honthorst
    c. Gossart
    d. Frankenthaler

23. Which of these events occurred during the Modern period of art history?
    a. automobiles became common
    b. invention of the printing press
    c. Galileo's scientific discoveries
    d. invention of the steam engine

24. El Greco's way of painting was admired by later artists who worked in the style called
    a. Neoclassic.
    b. Rococo.
    c. Romantic.
    d. Pointillist.

True/False

25. Reinier Nooms painted a kind of subject that was especially popular with art customers in his native country.

26. Corot and Caillebotte both frequently provided financial help to other artists.

27. Because of his great skill, Meléndez became a successful and wealthy man.

28. Frans Snyders often worked together on paintings with Frans Hals.

29. *Sunset on the Lagoon, Venice* was painted in a style that developed during the Modern period of art history.

30. Judith Leyster often used both ends of her brush to create the images she painted.

2019-2020 Art Study Test 1 - Grades 7-8
(Part B)

Answer Key

Elements			**History**		
1.	*The Annunciation*	(23, 67)	16.	a	(10, 41, 46)
2.	a	(50)	17.	watercolor	(64)
3.	caterpillar / butterfly	(32)	18.	c	(39)
4.	c	(49)	19.	Hassam	(63)
5.	c	(62)	20.	b	(60)
6.	a	(25)	21.	*Kaaterskill Fall*s	(44, 50)
7.	red	(8, 16, 59)	22.	b	(34)
8.	b	(22)	23.	d	(41)
9.	d	(26)	24.	c	(28)
10.	T	(29, 31)	25.	T	(37)
11.	F	(56)	26.	T	(52, 53)
12.	F	(30, 52)	27.	F	(43)
13.	T	(40)	28.	F	(36)
14.	T	(33)	29.	T	(11, 41, 58)
15.	F	(61)	30.	T	(35)

Numbers in parentheses are page numbers where answers can be found in the *Art Smart Bulletin* for 2019-2020 and 2020-2021. Correct spelling is not required for short answers.

1. Diagonal lines the artist used to picture architecture in *The Annunciation* were intended to
   a. create a feeling of movement.
   b. show perspective.
   c. focus attention on the figures.
   d. all of the above

2. Which genre scene is a larger original painting, *Setting Out to Fish* or *The Concert*?

3. _____ is a cool primary color.

4. Which of these still life paintings was <u>not</u> created with oils on canvas?
   a. *Flowers on a Window Ledge*
   b. *Still Life with Oranges, Jars, and Boxes of Sweets*
   c. *Still Life with Peaches and Old Glass*
   d. *Vase of Flowers with a Curtain*

5. The sitter in *Portrait of Hendrik III, Count of Nassau-Breda* appears
   a. calm and confident.
   b. busy and energetic.
   c. gentle and friendly.
   d. busy and distracted.

6. The ships' masts pictured in *Keelmen Heaving in Coals by Moonlight* offer an example of an artist's use of _____.

7. Color is used to tie foreground and background together in
   a. *Synchromy in Purple Minor*.
   b. *The Skater (Portrait of William Grant)*.
   c. *Madonna and Child with Saint Martina and Saint Agnes*.
   d. *Banks of the Seine at Médan*.

8. *Pansies in Washington* and *Sunset on the Lagoon, Venice* are most alike in their
   a. subjects.
   b. use of color.
   c. brushwork.
   d. use of perspective.

9. The artist created a feeling of movement in *Amsterdam Harbor Scene* with
   a. diagonal lines.
   b. round shapes.
   c. sunlight and shadow.
   d. complementary colors.

True/False

10. In *Still Life with Peaches and Old Glass*, the fruit and jars provide a contrast of textures.

11. The term canvas may be used to refer to a painting or to the type of surface on which the painting is created.

12. The lion under the woman's hand in *Ceres (Summer)* is the symbol that identified her to viewers.

13. Viewers see the Madonna and Child from a lower point of view in *Madonna and Child* than in *Madonna and Child with Saint Martina and Saint Agnes*.

14. Realistic detail is more important in *By the Seine* than in *View of the Dogana and Santa Maria della Salute*.

15. The artist included live animals in *Still Life with Grapes and Game* to add interest.

Art History

16. _____ is often called "the forgotten Impressionist."

17. Corot's father was
   a. a banker.
   b. a doctor.
   c. an engraver.
   d. a merchant.

18. Which of these artists painted during the Baroque period?
   a. Gossart
   b. Honthorst
   c. Ingres
   d. Sebastiano

19. *Solitude* was painted by an artist whose nationality was _____.

20. Kensett was one of the founders of the
   a. Impressionist style.
   b. British Royal Academy.
   c. Metropolitan Museum of Art.
   d. American Society of Painters in Watercolor.

21. Marcoussis was born in
   a. France.
   b. Italy.
   c. Poland.
   d. Spain.

22. New discoveries in science encouraged a more realistic approach toward painting during the _____ period of art history.

23. Which of these artists came from a family that included other painters?
   a. Bellini
   b. Jiménez Aranda
   c. Meléndez
   d. all of the above

24. Although he traveled extensively, for most of his life John Singer Sargent lived in
   a. London.
   b. New York.
   c. Paris.
   d. Rome.

True/False

25. The Romantic style of painting developed later than the Impressionist style did.

26. Judith Leyster's painting was influenced by the work of Frans Hals.

27. Helen Frankenthaler used thick paints and active brushwork to portray the landscape scenes she liked to paint.

28. Sir Peter Paul Rubens was knighted by King Charles I of England for his diplomatic services.

29. Both Watteau and Hogarth often used characters or ideas from the theater in their works.

30. Some of Botticelli's works were actually painted by assistants in his workshop.

2019-2020 Art Study Test 2 - Grades 7-8
(Part B)

Answer Key

Elements			**History**	
1.	b	(23)	16.	Bazille	(51)
2.	*The Concert*	(67)	17.	d	(52)
3.	blue	(9, 11, 15, 16)	18.	b	(34)
4.	d	(67)	19.	British	(44)
5.	a	(27)	20.	c	(49)
6.	rhythm	(11, 19, 47)	21.	c	(61)
7.	d	(55)	22.	Baroque	(29)
8.	c	(58, 65)	23.	d	(24, 43, 56)
9.	c	(37)	24.	a	(54)
10.	T	(63)	25.	F	(41)
11.	T	(8)	26.	T	(35)
12.	F	(38)	27.	F	(66)
13.	F	(24, 28)	28.	T	(31)
14.	F	(40, 60)	29.	T	(38, 39)
15.	F	(36)	30.	T	(25)

Numbers in parentheses are page numbers where answers can be found in the *Art Smart Bulletin* for 2019-2020 and 2020-2021. Correct spelling is <u>not</u> required for short answers.

A+ ACADEMICS

University Interscholastic League
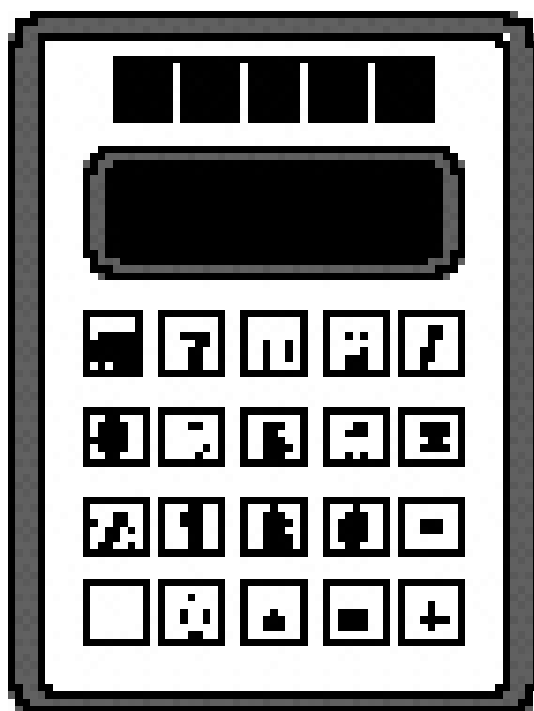
Calculator Applications

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

How to Write the Answers

A. For all problems except stated problems as noted below—write three significant digits.

1. Examples (* means correct but not recommended)
   Correct: 12.3, 123, 123.*, $1.23\text{x}10$*, $1.23\text{x}10^0$*
                 $1.23\text{x}10^1$, $1.23\text{x}10^{01}$, .0190, 0.0190, $1.90\text{x}10^{-2}$

   Incorrect: 12.30, 123.0, $1.23(10)^2$, $1.23{\cdot}10^2$, $1.230\text{x}10^2$,
                 $1.23*10^2$, 0.19, $1.9\text{x}10^{-2}$, $19.0\text{x}10^{-3}$, 1.90E-02,

   answers written in parentheses(), brackets[] or braces{} are incorrect

2. Plus or minus one digit error in the third significant digit is permitted.

B. For stated problems

1. Except for integer and dollar sign problems, answers to stated problems should be written with three significant digits.

2. Integer problems are indicated by (integer) in the answer blank. Integer problems answers must be exact, no plus or minus one digit, no decimal point or scientific notation.

3. Dollar sign ($) problems should be answered to the exact cent, but plus or minus one cent error is permitted. Answers must be in fixed notation. The decimal point and cents are required for exact-dollar answers.

19X-1.   955 – 1070 --- 1=_____

19X-2.   22 – 16 – 57 -- 2=_____

19X-3.   –27.8 + 6.19 + 26.2 -- 3=_____

19X-4.   π – 6 – 13 + 15 -- 4=_____

19X-5.   –386 – 1110 – 922 – 1030 ----------------------------------- 5=_____

19X-6.   39.9 – 39.3 – 49.7 + 141 + 88.4 --------------------------- 6=_____

19X-7.   1.72 + 1.35 + 1.5 + 1.16 + 0.884 -------------------------- 7=_____

19X-8.   (0.941 + 3.89 – 3.68) – (1.88 + 3.65) --------------------- 8=_____

19X-9.   81.6 x 33.9 x 557 -- 9=_____

19X-10.   147 x 507 x 137 x 1300 ------------------------------------10=_____

19X-11.   What is the positive value for the difference in 31.7 and
16.3 times pi?---11=_____

19X-12.   If one-inch equals 2.54 centimeters, then how many inches
are in 375 centimeters? ---12=_____ in

19X-13.   If there are on average 3538 ants in an ant mound, how many
ant mounds (Am) are there for one million ants? ------------------------13=_____ Am

19X-14.   (61)[68 x 147 x 59] ---14=_____

19X-15.   (102/75)[78 – 58] --15=_____

19X-16. $\left[\dfrac{130}{504}\right]$[(366/769) – 0.148] -------------------------------------16=_____

19X-17. $\left[\dfrac{115}{49}\right]$ [(134/56) + 2.35] -----------------------------------17=_____

19X-18. $\dfrac{(146/135) + (39/39)}{(0.0428 - 0.121)}$ -------------------------------------18=_____

19X-19. $\left[\dfrac{(3110/3460) - (2670/2040)}{1.87/(2.69)}\right]$ ------------------------------19=_____

19X-20. $\dfrac{618}{(509 - 329)} - \dfrac{(765 - 688)}{172}$ ------------------------------------20=_____

19X-21.   (0.49)[51/119 x 101/66] – 0.298 ---------------------------21=_____

19X-22. $\dfrac{(\pi)(418/551)(641/75)}{(669/527)}$ ------------------------------------22=_____

19X-23. $\dfrac{(0.00312 + 0.00241 - 0.00141)}{\{(0.0127 - 0.0047)/(877)\}}$ --------------------------23=_____

19X-24.   A tree has a root whose longest length is 89.3% of its
height above ground. If the tree is 24 feet 6 inches tall, how long is the
tree's longest root? ---24=_____ feet

19X-25.   Li has quiz grades of 87, 79, 91, 90 and 98. What is the
lowest grade that Li can make on the next quiz and have an average
of eighty-five?--25=_____ Integer

19X-26.   Anna was barbecuing for some friends, so she bought 10 Lbs.
of hamburger meat at $4.99 per Lb., six packages of buns at $1.99 per
package, four tomatoes at 49¢ each, a package of sliced cheese at $2.39,
a head of lettuce at 59¢ and six 2-liter bottles of soda at $1.59 per bottle.
How much did it cost her for all this food and drink? --------------------26=$_____

19X-27. $\dfrac{(6.46\text{x}10^5) + (3.00\text{x}10^5)}{(-0.163)(0.494) - 0.052}$ ------------------------------------27=_____

19X-28. $\dfrac{(0.0801 + 0.0521)(17.9 + 32.8)}{(1.85\text{x}10^{12})}$ --------------------------28=_____

19X-29. $(46.5)\left[(7.82\text{x}10^{-4}/0.00142)(23.3 + 4.88)\right]$ --------------29=_____

19X-30. $(18.3)\left[(4.64\text{x}10^{11}) - (2.11\text{x}10^{11})\right]$ ----------------------30=_____

19X-31. $\dfrac{(0.0157 + 0.00923)}{(1.92\text{x}10^{11})}$ ------------------------------------31=_____

19X-32. $\dfrac{1}{0.583} + \dfrac{1}{(1.39 - \pi)}$ -----------------------------------32=_____

19X-33. $\dfrac{1}{59.5} - \dfrac{1}{92.7} + \dfrac{1}{158}$ --------------------------------------33=_____

19X-34. $\left[\dfrac{1/865}{1/213}\right] + [0.982]$ --------------------------------------34=_____

19X-35.   If today one $US equals 112.30 Japanese Yen (¥) and one Euro (€) equals 1.1677 $US, how many Yen equal 250 Euros? -----------35=_____ ¥

19X-36.   A 50 Lb. bag of fertilizer stated that it was 15% Nitrogen, 10% Phosphorus and 12% Potassium. How many pounds of the fertilizer were just filler? (i.e. not any of the ingredients mentioned)--------------36=_____ Lbs.

19X-37.	19X-38.
RECTANGLE	CIRCLE
Area = 49300, width = 396, height = ?	Diameter = 0.38, Area = ?
19X-37 =_____	19X-38 =_____

19X-39. $(2.79 + 1.29 + 2.46)^2 (0.133 + 0.115)^2$ -------------------39=_____

19X-40. $\left[\dfrac{1.62}{2.08}\right](2.78 + 5.43)^4$ --40=_____

19X-41. $\left[\dfrac{11300 + (1/(5.18\times10^{-5}))}{(10700/19400) - 0.302}\right]^2$ ----------------------------------41=_____

19X-42. $(1/(8.49\times10^{-4}))(9650 - 1710)^3$ ---------------------------42=_____

19X-43. $\sqrt{1270} + \sqrt{1020 + 1160} - (\pi)\sqrt{685}$ -------------------------43=_____

19X-44. $(1250)\sqrt{1360 + 684 + 497}$ ------------------------------44=_____

19X-45. $\sqrt{5.86 - 6930/2560} + 1/\sqrt{0.0113 + 0.0498}$ ----------------45=_____

19X-46. $\dfrac{1}{\sqrt{1300 + 1040 + 1310}} + \left(\dfrac{1}{\sqrt{7.41}}\right)^4$ -------------------------46=_____

19X-47.   Matt and Mike stood back to back at the starting line of a circular track with a diameter of 50 yards. When the race started Mike ran with a speed of 12 feet/sec while Matt ran in the opposite direction with a speed of 11.5 feet/sec. How long did it take the two boys to meet? ------------47=_____min

19X-48.   If one ream of printer paper has 500 sheets and is 2 in. thick, how thick is each sheet? --48=_____mm

19X-49.	19X-50.
RIGHT TRIANGLE	RIGHT TRIANGLE
19X-49 =_____	19X-50 =_____deg

Page 19X-5
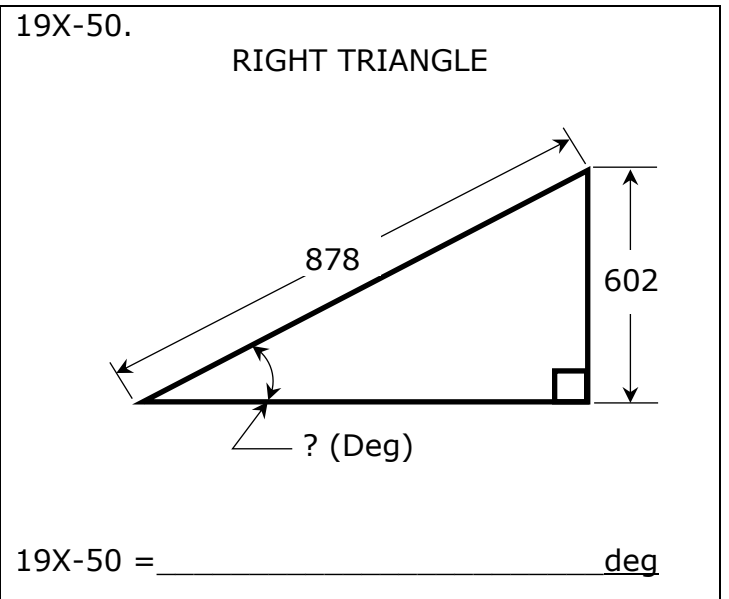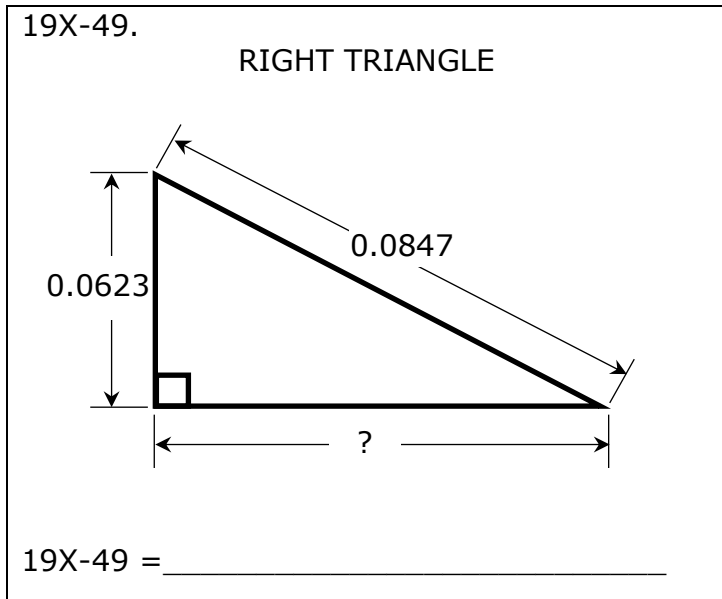
19X-51. $\dfrac{\sqrt{8.45 + \pi + 8.29}}{(0.135 - 0.222 + 0.229)^4}$ -------------------------------51=_____

19X-52. $\left[\dfrac{\sqrt{\sqrt{2370 - 1310}}}{-(24500 - 10600)}\right]^2 [1570 + 753]$ -------------------------52=_____

19X-53. $\left[\dfrac{31.1 - 10.5 + \sqrt{1270/9.08}}{-5770 + 8340}\right]^{-4}$ ----------------------------53=_____

19X-54. $\sqrt{\dfrac{(12300)(48800)}{(21400)(6.96\times10^5)}} - 0.0364 + 0.143$ ------------------54=_____

19X-55. $(120)^2 \sqrt{(149)/(394)} - (8340 + 4550)$ --------------------55=_____
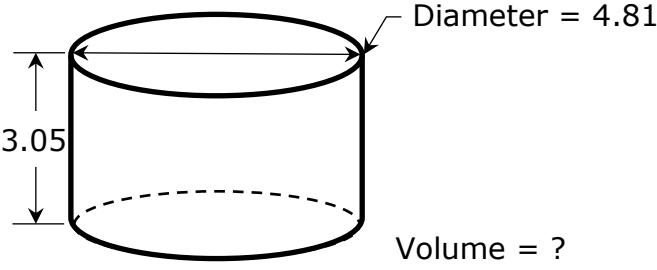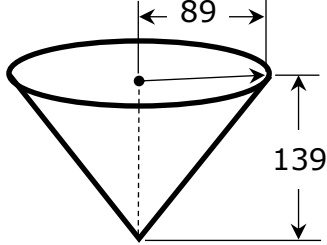
19X-56. $\sqrt{\dfrac{1/(20.5 - 4.49)}{(9.81)(312 + 396)^2}}$ ---------------------------------------56=_____

19X-57. $\sqrt{\dfrac{(236)(1110)}{(1060) + (1070)}} + 1/(0.618)^5$ --------------------------57=_____

19X-58. $(\text{deg}) \tan(1200°) + (48.1/50.6)$ ---------------------------58=_____

19X-59.   Assuming a constant humidity and pressure, the speed of sound varies with temperature. Under these conditions, the speed of sound increases or decreases six-tenths of a meter/sec for every degree Celsius change. If the speed of sound at 0°C at a certain location is 341 meters/sec (m/s), what is the speed of sound at the same location but at the temperature of 100° Fahrenheit? ----------------------------------59=_____ m/s

19X-60.   Under certain conditions the loudness of sound (sound intensity) is inversely proportional to the square of the distance from the source of the sound. If a firecracker makes a sound of 45 decibels (dB), how loud is the sound 4.75 meters away? ---60=_____ dB

19X-61. RIGHT CYLINDER	19X-62. RIGHT CONE
Diameter = 4.81 3.05 Volume = ? 19X-61 =_____	← 89 → 139 Volume = ? 19X-62 =_____

19X-63. $\dfrac{24! + 23!}{25!}$ ---63=_____

19X-64. $(2.32\text{x}10^9 - 2.55\text{x}10^9)^5(4.93\text{x}10^7)$ ------------------------64=_____

19X-65.   (deg) $\dfrac{\cos(223°)}{430}$ --65=_____

19X-66.   (deg) sin(60.4° − 30.5°) + 0.197   --------------------------66=_____

19X-67.   (deg) (3790 − 2220)sin(4.38°) + 89.1   ---------------------67=_____

19X-68.   (rad) tan[(1.76 − 0.28)(0.773)]   ----------------------------68=_____

19X-69.   (rad) (525)tan(61.8)   --69=_____

19X-70. $(7470 - 5110)^{0.176} - 0.339$ ------------------------------70=_____

19X-71.   A number multiplied by the quantity, itself increased by pi, is
equal to 10. What is the positive value for this number? ----------------71=_____

19X-72.   A city in the north Texas area increased in population from
2,472 to 12,019 in a period of 5 years. What is the percent increase? --72=_____ %

19X-73. SQUARE & ISOSCELES TRIANGLE	19X-74. CONCENTRIC HEMISPHERES
0.0036 0.00481 Total Area = ?	$R_2 = 9.18$ $R_1 = 7.21$ Volume Between = ?
19X-73 =_____	19X-74 =_____
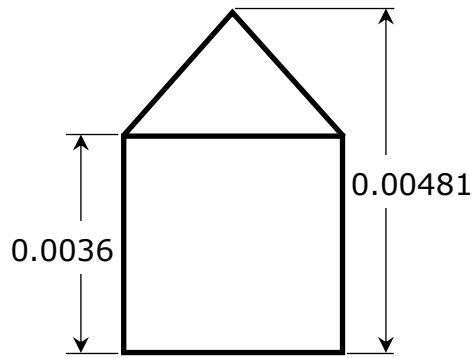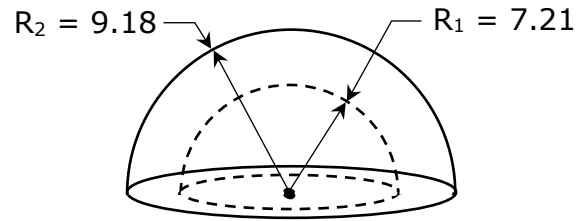
19X-75. $\mathrm{Ln}\left[\dfrac{66.2 + 84.3 + 69.8}{32.9 + 133 - 123}\right]$ -------------------------------------75=_____

19X-76. $\dfrac{\mathrm{Log}(6.34 \times 10^6 + 6.11 \times 10^6)}{3.24}$ --------------------------------76=_____

19X-77. $\mathrm{Log}\sqrt{\dfrac{212 - 173}{(1.08)(60.4)}}$ -------------------------------------77=_____

19X-78. $(0.366)^{\pi}(130)^2(14.1 - 9.98)^3$ ------------------------------78=_____

19X-79. $1 + 3 + 5 + \ldots + 279$ ------------------------------------79=_____

19X-80. $1 + (0.379) + \dfrac{(0.379)^2}{2} + \dfrac{(0.379)^3}{6} + \dfrac{(0.379)^4}{24}$ -------------80=_____

2019 University Interscholastic League MS/JH Calculator Contest A Answer Key

19X-1 = -115
= -1.15×10^2

19X-2 = -51.0
= -5.10×10^1

19X-3 = 4.59
= 4.59×10^0

19X-4 = -0.858
= -8.58×10^{-1}

19X-5 = -3450
= -3.45×10^3

19X-6 = 180
= 1.80×10^2

19X-7 = 6.61
= 6.61×10^0

19X-8 = -4.38
= -4.38×10^0

19X-9 = 1.54×10^6

19X-10 = 1.33×10^{10}

19X-11 = 19.5
= 1.95×10^1

19X-12 = 148
= 1.48×10^2

19X-13 = 283
= 2.83×10^2

19X-14 = 3.60×10^7

19X-15 = 27.2
= 2.72×10^1

19X-16 = 0.0846
= 8.46×10^{-2}

19X-17 = 11.1
= 1.11×10^1

19X-18 = -26.6
= -2.66×10^1

19X-19 = -0.590
= -5.90×10^{-1}

19X-20 = 2.99
= 2.99×10^0

19X-21 = 0.0234
= 2.34×10^{-2}

19X-22 = 16.0
= 1.60×10^1

19X-23 = 452
= 4.52×10^2

19X-24 = 21.9
= 2.19×10^1

19X-25 = 65
INTEGER

19X-26 = 76.32
Dollar Answer

19X-27 = -7.14×10^6

19X-28 = 3.62×10^{-12}

19X-29 = 722
= 7.22×10^2

19X-30 = 4.63×10^{12}

19X-31 = 1.30×10^{-13}

19X-32 = 1.14
= 1.14×10^0

19X-33 = 0.0123
= 1.23×10^{-2}

19X-34 = 1.23
= 1.23×10^0

19X-35 = 33000
= 3.30×10^4

19X-36 = 31.5
= 3.15×10^1

19X-37 = 124
= 1.24×10^2

19X-38 = 0.113
= 1.13×10^{-1}

2019 University Interscholastic League MS/JH Calculator Contest A Answer Key

19X-39 = 2.63
= 2.63×10^0

19X-40 = 3540
= 3.54×10^3

19X-41 = 1.50×10^{10}

19X-42 = 5.90×10^{14}

19X-43 = 0.104
= 1.04×10^{-1}

19X-44 = 63000
= 6.30×10^4

19X-45 = 5.82
= 5.82×10^0

19X-46 = 0.0348
= 3.48×10^{-2}

19X-47 = 0.334
= 3.34×10^{-1}

19X-48 = 0.102
= 1.02×10^{-1}

19X-49 = 0.0574
= 5.74×10^{-2}

19X-50 = 43.3
= 4.33×10^1

19X-51 = 11000
= 1.10×10^4

19X-52 = 0.000391
= 3.91×10^{-4}

19X-53 = 3.95×10^7

19X-54 = 0.307
= 3.07×10^{-1}

19X-55 = -4030
= -4.03×10^3

19X-56 = 0.000113
= 1.13×10^{-4}

19X-57 = 22.2
= 2.22×10^1

19X-58 = -0.781
= -7.81×10^{-1}

19X-59 = 364
= 3.64×10^2

19X-60 = 1.99
= 1.99×10^0

19X-61 = 55.4
= 5.54×10^1

19X-62 = 1.15×10^6

19X-63 = 0.0417
= 4.17×10^{-2}

19X-64 = -3.17×10^{49}

19X-65 = -0.00170
= -1.70×10^{-3}

19X-66 = 0.695
= 6.95×10^{-1}

19X-67 = 209
= 2.09×10^2

19X-68 = 2.20
= 2.20×10^0

19X-69 = -878
= -8.78×10^2

19X-70 = 0.282
= 2.82×10^{-1}

19X-71 = 1.96
= 1.96×10^0

19X-72 = 386
= 3.86×10^2

19X-73 = 0.0000151
= 1.51×10^{-5}

19X-74 = 835
= 8.35×10^2

19X-75 = 1.64
= 1.64×10^0

19X-76 = 2.19
= 2.19×10^0

19X-77 = -0.112
= -1.12×10^{-1}

19X-78 = 50300
= 5.03×10^4

19X-79 = 19600
= 1.96×10^4

19X-80 = 1.46
= 1.46×10^0

FALL/WINTER DISTRICT 2018-2019

A+ ACADEMICS

University Interscholastic League

Calculator Applications

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

How to Write the Answers

A. For all problems except stated problems as noted below—write three significant digits.

1. Examples (* means correct but not recommended)

   Correct: 12.3, 123, 123.*, 1.23×10*, 1.23×10^0*

   1.23×10^1, 1.23×10^{01}, .0190, 0.0190, 1.90×10^{-2}

   Incorrect: 12.30, 123.0, $1.23(10)^2$, $1.23 \cdot 10^2$, 1.230×10^2,

   $1.23 * 10^2$, 0.19, 1.9×10^{-2}, 19.0×10^{-3}, 1.90E-02,

   answers written in parentheses(), brackets[] or braces{} are incorrect

2. Plus or minus one digit error in the third significant digit is permitted.

B. For stated problems

1. Except for integer and dollar sign problems, answers to stated problems should be written with three significant digits.

2. Integer problems are indicated by (integer) in the answer blank. Integer problems answers must be exact, no plus or minus one digit, no decimal point or scientific notation.

3. Dollar sign ($) problems should be answered to the exact cent, but plus or minus one cent error is permitted. Answers must be in fixed notation. The decimal point and cents are required for exact-dollar answers.

2019 University Interscholastic League MS/JH Calculator Contest B

19Y-1. −815 − 309 --- 1=_____

19Y-2. 45 − 25 + 31 -- 2=_____

19Y-3. 87 + 39 − 36 -- 3=_____

19Y-4. π − 14 − 8 + 16 -- 4=_____

19Y-5. 1560 − 4510 − 4210 + 6060 --------------------------------- 5=_____

19Y-6. 202 − 176 − 54.5 − 139 + 244 ------------------------------ 6=_____

19Y-7. (3.17 − 1.24) + (0.642 − 1.25 − 2.11) ---------------------- 7=_____

19Y-8. 5.62 + 2.98 + 7.19 + π + 1.18 ---------------------------- 8=_____

19Y-9. 344 x 51.7 x 52.1 -- 9=_____

19Y-10. 1670 x 22.1 x 5000 x 31.3 ---------------------------------- 10=_____

19Y-11.   What is the sum of 16.4, pi, and positive square root of 29? 11=_____

19Y-12.   A rectangular block of wood has a mass of 83 grams and a volume of 92 cm^3. What is the wood's density? ------------------------- 12=_____ g/cm^3

19Y-13.   A car has a miles per gallon (mpg) rating of 27.6 mpg. How many miles will the car travel on 16.3 gallons of fuel?------------------- 13=_____ miles

19Y-14.   (224)[85 x 79 x 455] --- 14=_____

19Y-15.   (81)[116 x 84/16] --- 15=_____

19Y-16. $\left[\dfrac{555}{122}\right]$[(585/149) – 2.67]   ------------------------------------ 16=_____

19Y-17.   (203 + 504)[120 – 346 – 323] ----------------------------- 17=_____

19Y-18. $\left[\dfrac{(8950/7120) - (6200/1920)}{0.398/(0.699)}\right]$ ------------------------------ 18=_____

19Y-19. $\dfrac{(57/112) + (190/183)}{(6.70\text{x}10^{-4} - 9.34\text{x}10^{-4})}$ ------------------------------------ 19=_____

19Y-20. (π)[310/413 x 545/344] – 1.47 --------------------------- 20=_____

19Y-21. $\dfrac{(\pi)(2/13)(2/14)}{59}$ -- 21=_____

19Y-22. $\dfrac{(\pi + 3.17 - 2.79)}{\{(0.00224 - 0.00966)/(856)\}}$ ------------------------------ 22=_____

19Y-23. $\left[\dfrac{465 + 359}{839 - 1320}\right]\left[\dfrac{583}{1430}\right]$ --- 23=_____

19Y-24.   According to my car's temperature probe, the outside
temperature was 98°F. The actual outside air temperature was 92.5°F.
What is the percent error in the probe's temperature reading?---------- 24=_____%

19Y-25.   I bought a box of cat litter that was priced at $19.79. If I used
a $2-off coupon and sale tax is 8¼%, how much did the cat litter cost? 25=$_____

19Y-26.   If there are 640 acres in one square mile, how many square
feet are in one acre? --- 26=_____ft^2(Integer)

19Y-27. $(0.00196)\left[[0.00149/(3.82 \times 10^{-4})][211/(122)]\right]$ ---------- 27=_____

19Y-28. $(682)[(64.4/67.3)(118 + 49)]$ ---------------------------- 28=_____

19Y-29. $[6050 - (5710 + 4470)] + [(14.2)(826 - 1000)]$ --------- 29=_____

19Y-30. $\dfrac{(0.0305 + 0.0813)}{(9.91 \times 10^{10})}$ -- 30=_____

19Y-31. $(68)\left[(7.94 \times 10^9) - (3.74 \times 10^{10})\right]$ ------------------------ 31=_____
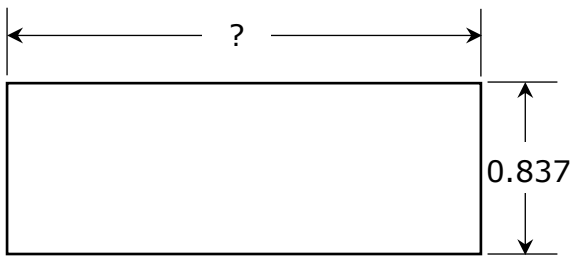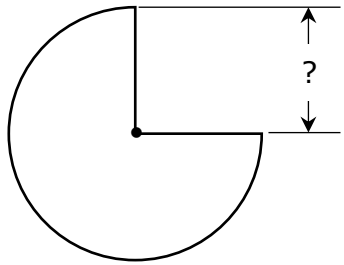
19Y-32. $(0.0123)\left[\dfrac{0.249}{(3.77 \times 10^7)}\right]$ ------------------------------------- 32=_____

19Y-33. $\dfrac{1}{21.8} - \dfrac{1}{(50.7 + 123)}$ ------------------------------------ 33=_____

19Y-34. $\left[\dfrac{1/475}{1/510}\right] + [0.407]$ -------------------------------------- 34=_____

19Y-35.   In Mackenzie's gym class there are 28 boys and 23 girls. If every day the teacher randomly chooses one student to take the roll sheet to the attendance office, what is the probability that it will be a girl? ---- 35=_____

19Y-36.   A 10-foot ladder is leaned up against a building wall. If the bottom of the ladder is on level ground and 3 ft 8 in from the bottom of the wall, how far up the wall is the top of the ladder? ------------------- 36=_____ ft

19Y-37.
RECTANGLE

?

0.837

Perimeter = 5.25

19Y-37=_____

19Y-38.
THREE-QUARTERS CIRCLE

?

Area = 500

19Y-38=_____

19Y-39. $\left[\dfrac{221}{2.89}\right](0.289 + 0.992)^4$ ----------------------------------- 39=_____

19Y-40. $\sqrt[4]{\dfrac{17.4 + 4.49}{5240 - 1900}}$ ------------------------------------- 40=_____

19Y-41. $\dfrac{(15000 + 19100)^3}{(0.0819 - 0.0772)^2}$ ------------------------------------- 41=_____

19Y-42. $\sqrt{(31.5/11.4) + 1.93 - 0.657}$ ------------------------------ 42=_____

19Y-43. $(35500)\sqrt{7680 + 1830 + 8610}$ ---------------------------- 43=_____
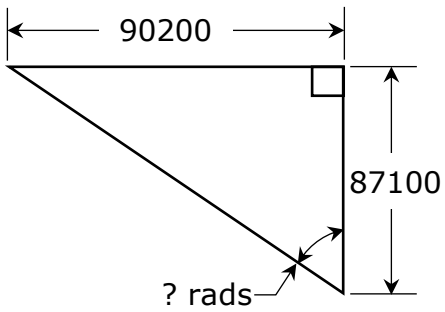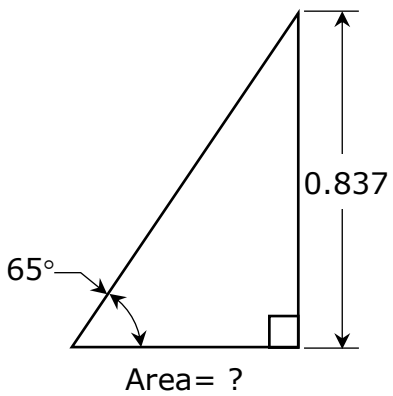
19Y-44. $(1/\pi)\sqrt[3]{\dfrac{0.139 + 0.124}{0.0471 - 0.0211}}$ ------------------------------------ 44=_____

19Y-45. $\dfrac{1}{\sqrt{436 + 1060 + 372}} + \left(\dfrac{1}{\sqrt{5.46}}\right)^3$ ---------------------------- 45=_____

19Y-46. $\sqrt[3]{2.06 - 2990/4710} + 1/\sqrt{0.29 + 0.191}$ ------------------- 46=_____

19Y-47.   A steel pipe, 16 inches in diameter, stretches from Cushing, Oklahoma to Houston, Texas; a distance of 511 miles. If the pipe is filled with natural gas, how much gas is in the pipe? -------------------------- 47=_____ cu.ft.

19Y-48.   Liz found out that a company charges $250 plus $7.75 per person to host a birthday party for one of her sons. If there were a total of 18 individuals at the party, how much did it cost? -------------------- 48=$_____

19Y-49.
RIGHT TRIANGLE

90200

87100

? rads

19Y-49=_____rads

19Y-50.
RIGHT TRIANGLE

0.837

65°

Area= ?

19Y-50=_____

19Y-51. $\dfrac{(0.00822 + 0.00484 - 0.00149)^2}{\sqrt{0.0392 + 0.291 + 0.31}}$ -------------------------- 51=_____

19Y-52. $\sqrt{\dfrac{7.83 \times 10^{-5}}{(0.24)(890)}} + \dfrac{(0.042 - 0.0335)}{(5.51 + 4.71)}$ ----------------------- 52=_____

19Y-53. $\left[\dfrac{5.09 - 3.32 + \sqrt{2.49/1.71}}{-198 + 326}\right]^{-2}$ ------------------------------ 53=_____

19Y-54. $\sqrt{\dfrac{(11900)(41100)}{(50600)(2850)}} - 0.786 + 0.202$ ---------------------- 54=_____

19Y-55. $21200 + \sqrt{(18400)(21400)} - (6870 + 3750)$ -------------- 55=_____
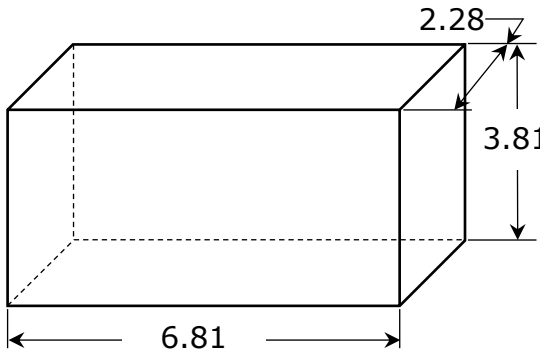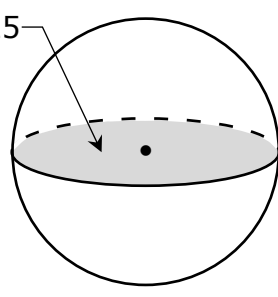
19Y-56. $0.969 + \sqrt{(1970)/(1480)} - (0.511 + 0.639)^2$ -------------- 56=_____

19Y-57. $\sqrt{\dfrac{1/(17.9 - 16.6)}{(194)(17.9 + 4.79)^{-2}}}$ ------------------------------------ 57=_____

19Y-58. $\sqrt{\dfrac{(29.9)(86.5)}{(217) + (123)}} - 2.92$ ------------------------------------ 58=_____

19Y-59.   A formula for calculating the final speed of an object dropping in a gravitational field is found by adding the initial speed to the product of the value of the acceleration due to gravity and the time for that acceleration. An object is thrown downward with an initial speed of 4.75 feet/second on the airless Moon where the acceleration due to gravity is 5.36 feet/second^2. If the object takes 2.83 seconds to land, what is the speed of the object upon landing? -- 59=_____ ft/sec

19Y-60.   An equation, studied by many high school Physics students, is called the lens equation. It states that the reciprocal of the focal length of a lens is equal to the sum of the reciprocal of the object distance and the reciprocal of the image distance. If the focal length of a lens is 35 millimeters and the image distance is 36 millimeters, what is the object distance? -- 60=_____ meters

19Y-61.
RECTANGULAR BOX

2.28

3.81

6.81

Total Surface Area = ?

19Y-61=_____

19Y-62.
SPHERE

Shaded Area 0.00825

Volume = ?

19Y-62=_____

19Y-63. $\dfrac{6! - 8!}{14!}$ --- 63=_____

19Y-64. (deg) (157 − 261)tan(933°) --------------------------------- 64=_____

19Y-65. $(106 - \pi)e^{0.379}$ --------------------------------------- 65=_____

19Y-66. (rad) $\sin\left[\dfrac{(4.2)(\pi)}{(50.1)(2.61)}\right]$ --------------------------------- 66=_____

19Y-67. (deg) tan(1.74° − 0.351°) + 0.00383 --------------------- 67=_____

19Y-68. (deg) $\dfrac{\sin(49.4°) - \tan(49.4°)}{\sin(49.4°)}$ ------------------------------ 68=_____

19Y-69. (deg) $\dfrac{\sin(5.61°)}{\tan(5.61°)}[622]$ --------------------------------- 69=_____

19Y-70. $(16.5 + 54.3 + 43.1)^{2/5}$ ----------------------------------- 70=_____

19Y-71.   The international Space Station (ISS) is currently 211 miles above the Earth's surface. If the radius of the Earth is 3960 miles and the ISS take 93 minutes to circle once around in orbit, how fast is the ISS moving in orbit around the Earth?------------------------------------- 71=_____ mph

19Y-72.   If a light beam travels with the speed of 186,000 miles/second, how long does it take to travel 132 feet across a gym floor? ------------ 72=_____ s

Page 19Y-7

19Y-73.

SQUARE AND RECTANGLE

A — B — C
| | |
9.2 | (dashed diagonal A to D) |
| | |
F — E — D
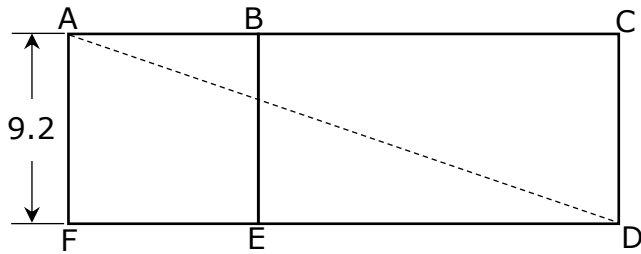
Rectangle Area = 2.1 x Square Area

AD = ?

19Y-73=_____

19Y-74.

CUBE AND RIGHT CYLINDER CAVITY

Shaded Area = 3.95×10^9

936000
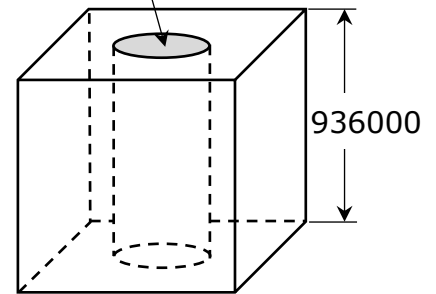
Volume Remaining = ?

19Y-74=_____

19Y-75. $\dfrac{\text{Log}(7.78 \times 10^{10} + 5.50 \times 10^{11})}{0.514}$ ------------------------------- 75=_____

19Y-76. $\dfrac{(6.48)^{0.686}(48.2)^{0.986}}{(9.17 - 5.3)^{-10}}$ ------------------------------ 76=_____

19Y-77. $(9010)10^{(0.388)(3.51)}$ ------------------------------ 77=_____

19Y-78. $(7.39)^{\pi}(0.0301)^2(415 - 276)^4$ --------------------------- 78=_____

19Y-79. $1 + 2 + 3 + \ldots + 539$ -- 79=_____

19Y-80. $1 + 0.16 + (0.16)^2 + \dfrac{(0.16)^4}{8} - \dfrac{(0.16)^5}{15}$ ------------------ 80=_____

2019 University Interscholastic League MS/JH Calculator Contest B Answer Key

19Y-1 = -1120
= -1.12×10^3

19Y-2 = 51.0
= 5.10×10^1

19Y-3 = 90.0
= 9.00×10^1

19Y-4 = -2.86
= -2.86×10^0

19Y-5 = -1100
= -1.10×10^3

19Y-6 = 76.5
= 7.65×10^1

19Y-7 = -0.788
= -7.88×10^{-1}

19Y-8 = 20.1
= 2.01×10^1

19Y-9 = 927000
= 9.27×10^5

19Y-10 = 5.78×10^9

19Y-11 = 24.9
= 2.49×10^1

19Y-12 = 0.902
= 9.02×10^{-1}

19Y-13 = 450
= 4.50×10^2

19Y-14 = 6.84×10^8

19Y-15 = 49300
= 4.93×10^4

19Y-16 = 5.71
= 5.71×10^0

19Y-17 = -388000
= -3.88×10^5

19Y-18 = -3.46
= -3.46×10^0

19Y-19 = -5860
= -5.86×10^3

19Y-20 = 2.27
= 2.27×10^0

19Y-21 = 0.00117
= 1.17×10^{-3}

19Y-22 = -406000
= -4.06×10^5

19Y-23 = -0.698
= -6.98×10^{-1}

19Y-24 = 5.95
= 5.95×10^0

19Y-25 = 19.26
Dollar Answer

19Y-26 = 43560
Integer Answer

19Y-27 = 0.0132
= 1.32×10^{-2}

19Y-28 = 109000
= 1.09×10^5

19Y-29 = -6600
= -6.60×10^3

19Y-30 = 1.13×10^{-12}

19Y-31 = -2.00×10^{12}

19Y-32 = 8.12×10^{-11}

19Y-33 = 0.0401
= 4.01×10^{-2}

19Y-34 = 1.48
= 1.48×10^0

19Y-35 = 0.451
= 4.51×10^{-1}

19Y-36 = 9.30
= 9.30×10^0

19Y-37 = 1.79
= 1.79×10^0

19Y-38 = 14.6
= 1.46×10^1

2019 University Interscholastic League MS/JH Calculator Contest B Answer Key

19Y-39 = 206	19Y-51 = 0.000167	19Y-61 = 100
19Y-40 = 2.06x10^2	= 1.67x10^{-4}	= 1.00x10^2
19Y-40 = 0.285	19Y-52 = 0.00144	19Y-62 = 0.000564
= 2.85x10^{-1}	= 1.44x10^{-3}	= 5.64x10^{-4}
19Y-41 = 1.80x10^{18}	19Y-53 = 1850	19Y-63 = -4.54x10^{-7}
19Y-42 = 2.01	= 1.85x10^3	19Y-64 = -67.5
= 2.01x10^0	19Y-54 = 1.26	= -6.75x10^1
19Y-43 = 4.78x10^6	= 1.26x10^0	19Y-65 = 150
19Y-44 = 0.688	19Y-55 = 30400	= 1.50x10^2
= 6.88x10^{-1}	= 3.04x10^4	19Y-66 = 0.101
19Y-45 = 0.102	19Y-56 = 0.800	= 1.01x10^{-1}
= 1.02x10^{-1}	= 8.00x10^{-1}	19Y-67 = 0.0281
19Y-46 = 2.57	19Y-57 = 1.43	= 2.81x10^{-2}
= 2.57x10^0	= 1.43x10^0	19Y-68 = -0.537
19Y-47 = 3.77x10^6	19Y-58 = -0.162	= -5.37x10^{-1}
19Y-48 = 389.50	= -1.62x10^{-1}	19Y-69 = 619
Dollar Answer	19Y-59 = 19.9	= 6.19x10^2
19Y-49 = 0.803	= 1.99x10^1	19Y-70 = 6.65
= 8.03x10^{-1}	19Y-60 = 1.26	= 6.65x10^0
19Y-50 = 0.163	= 1.26x10^0	19Y-71 = 16900
= 1.63x10^{-1}		= 1.69x10^4
		19Y-72 = 1.34x10^{-7}

19Y-73 = 30.0	
= 3.00x10^1	
19Y-74 = 8.16x10^{17}	
19Y-75 = 23.0	
19Y-76 = 1.24x10^8	
19Y-77 = 207000	
= 2.07x10^5	
19Y-78 = 1.81x10^8	
19Y-79 = 146000	
= 1.46x10^5	
19Y-80 = 1.19	
= 1.19x10^0	

A+ ACADEMICS

University Interscholastic League

Calculator Applications

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

How to Write the Answers

A. For all problems except stated problems as noted below—write three significant digits.

1. Examples (* means correct but not recommended)
   Correct: 12.3, 123, 123.*, 1.23×10*, 1.23×10^0*
   1.23×10^1, 1.23×10^{01}, .0190, 0.0190, 1.90×10^{-2}

   Incorrect: 12.30, 123.0, $1.23(10)^2$, $1.23 \cdot 10^2$, 1.230×10^2,
   $1.23*10^2$, 0.19, 1.9×10^{-2}, 19.0×10^{-3}, 1.90E-02,

   answers written in parentheses(), brackets[] or braces{} are incorrect

2. Plus or minus one digit error in the third significant digit is permitted.

B. For stated problems

1. Except for integer and dollar sign problems, answers to stated problems should be written with three significant digits.

2. Integer problems are indicated by (integer) in the answer blank. Integer problems answers must be exact, no plus or minus one digit, no decimal point or scientific notation.

3. Dollar sign ($) problems should be answered to the exact cent, but plus or minus one cent error is permitted. Answers must be in fixed notation. The decimal point and cents are required for exact-dollar answers.

2019 University Interscholastic League MS/JH Calculator Contest C

19Z-1.   643 − 1110 --- 1=_____

19Z-2.   15 + 34 − 60 -- 2=_____

19Z-3.   −2700 − 1660 + 3670 -- 3=_____

19Z-4.   π − 27 − 25 − 17 --- 4=_____

19Z-5.   −52 + 146 − 177 − 355 -------------------------------------- 5=_____

19Z-6.   134 − 81.6 − 59.5 + 137 + 169 ---------------------------- 6=_____

19Z-7.   −0.281 + 1.14 − 0.608 + 1.34 + 0.452 -------------------- 7=_____

19Z-8.   0.19 − 1.33 + 1.37 − 1.24 − 0.802 ------------------------ 8=_____

19Z-9.   142 x 117 x 213 -- 9=_____

19Z-10.   187 x 1180 x 208 x 933 ----------------------------------10=_____

19Z-11.   What is the positive difference between two pi and $\dfrac{13}{7}$? -----11=_____

19Z-12.   A rectangular block of wood has a mass of 79.3 grams and a volume of 90 cm^3. What is the wood's density? --------------------------12=_____ g/cm^3

19Z-13.   A car has a mile per gallon (mpg) rating of 31.6 mpg. How many miles will the car travel on 16.5 gallons of fuel? -------------------13=_____ miles

19Z-14. $(-77)[131 \times 71 \times 66]$ --14=_____

19Z-15. $(-217)[89 \times 189/135]$ --15=_____

19Z-16. $\{52/45\}\left[\dfrac{311}{300 + 47}\right]$ --16=_____

19Z-17. $\left[\dfrac{73}{51}\right][(27/13) + 0.785]$ ------------------------------------17=_____

19Z-18. $\dfrac{[0.109/(0.165)]/0.709}{(6.65 \times 10^{-4} \times 4.84 \times 10^{-4})(1.12)}$ ----------------------------18=_____

19Z-19. $\left[\dfrac{68/59}{134/101}\right]\{0.327 + 0.229 - 1.6\}$ --------------------------19=_____

19Z-20. $(1.55)[68/132 \times 232/212] - 0.728$ ------------------------20=_____

19Z-21. $\dfrac{(1440)(282)}{0.0176}(0.00117 - 0.00108)$ ------------------------21=_____

19Z-22. $\dfrac{(\pi)(87/113)(95/67)}{(41/124)}$ ------------------------------------22=_____

19Z-23. $\left[\dfrac{760 + 4610}{1880 - 4090}\right]\left[\dfrac{5020}{2530}\right]$ ------------------------------------23=_____

19Z-24.   According to my car's temperature probe, the outside
temperature was 67°F. The actual outside air temperature was 66.5°F.
What is the percent error in the probe's temperature reading? -----------24=_____%

19Z-25.   I bought a box of cat litter that was priced at $17.99. If I used
a $2-off coupon and sale tax is 8¼%, how much did the cat litter cost? -25=$_____

19Z-26.   If there are 640 acres in one square mile, how many square
yards (yds) are in one acre? --26=_____ yds²(Integer)

19Z-27. $[1930 - (472 + 1840)] + [(0.381)(1570 - 1850)]$ --------27=_____

19Z-28. $(0.00331)[[5.4/(4.56)][0.0284/(0.0172)]]$ ----------------28=_____

19Z-29. $\dfrac{(35.4 - 36.9)(0.0093 + 0.0126)}{(1.61 \times 10^{11})}$ --------------------------29=_____

19Z-30. $\dfrac{(0.0202 + 0.0219)}{(7.00 \times 10^{11})}$ -------------------------------------30=_____

19Z-31. $\dfrac{1}{501} + \dfrac{1}{(468 - 270)}$ ---31=_____
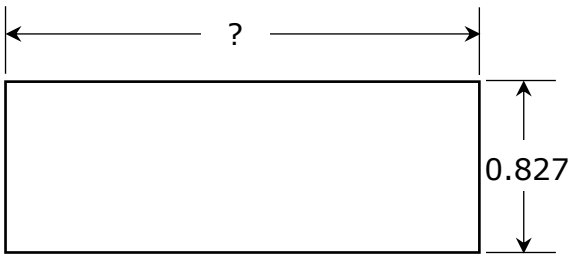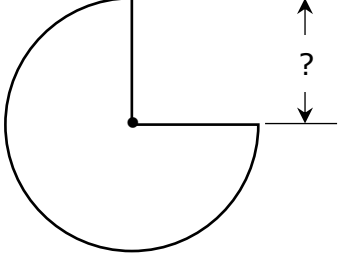
19Z-32. $[0.0297]\left[\dfrac{1/4570}{1/(5050)}\right]$ ---32=_____

19Z-33. $\dfrac{1}{253} - \dfrac{1}{(346 + 288)}$ ---33=_____

19Z-34. $\dfrac{1}{173} - \dfrac{1}{115} + \dfrac{1}{26.6}$ ---34=_____

19Z-35.   In Mackenzie's gym class there are 32 boys and 24 girls. If every day the teacher randomly chooses one student to take the roll sheet to the attendance office, what is the probability that it will be a girl? ----35=_____

19Z-36.   A 12-foot ladder is leaned up against a building wall. If the bottom of the ladder is on level ground and 3 ft 8 in from the bottom of the wall, how far up the wall is the top of the ladder? --------------------36=_____   ft

19Z-37.	19Z-38.
RECTANGLE	THREE-QUARTERS CIRCLE
? 0.827 Perimeter = 5.45	? Area = 0.846
19Z-37=_____	19Z-38=_____

19Z-39. $\left[\dfrac{1780 + (1/(0.00229))}{(1700/494) - 2.79}\right]^2$ ----------------------------------39=_____

19Z-40. $(874 + 159 + 876)^2(760 + 1300)^2$ -------------------------40=_____

19Z-41. $\left[\dfrac{2390}{205}\right](50.2 + 52.3)^4$ ---------------------------------41=_____

19Z-42. $(1/(4.29\text{x}10^{-4}))(1410 - 2010)^3$ ---------------------------42=_____

19Z-43. $\sqrt{(1140/1930) + 0.478} - 0.275$ ---------------------------43=_____
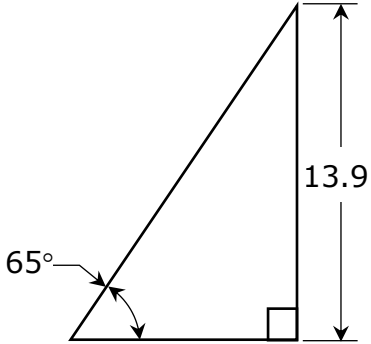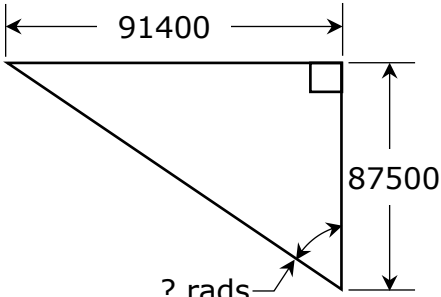
19Z-44. $\sqrt{1430 - 1290 + 1300} - \sqrt{335}$ ----------------------------44=_____

19Z-45. $\sqrt[3]{3.14 - 1750/1310} + 1/\sqrt{0.0571 + 0.15}$ ------------------45=_____

19Z-46. $\dfrac{1}{\sqrt{156 + 184 + 187}} + \left(\dfrac{1}{\sqrt{4.56}}\right)^3$ ---------------------------46=_____

19Z-47.   A steel pipe, 16 inches in diameter, stretches from Andrews, Texas to Houston, Texas; a distance of 463 miles. If the pipe is filled with natural gas, how much gas is in the pipe? --------------------------47=_____ cu.ft.

19Z-48.   Liz found out that a company charges $250 plus $8.50 per person to host a birthday party for one of her sons. If there were a total of 21 individuals at the party, how much did it cost? --------------------48=$_____

19Z-49.

RIGHT TRIANGLE

65°

13.9

Area= ?

19Z-49=_____

19Z-50.

RIGHT TRIANGLE

91400

87500

? rads

19Z-50=_____rads

19Z-51. $\left[\dfrac{716 + 1060 + \sqrt{2.91 \times 10^6 + 2.32 \times 10^6}}{21/20.2} \right]^3$ ----------------51=_____

19Z-52. $\dfrac{(12 + 27.3 - 33.8)^3}{\sqrt{64.2 + 54.1 + 50.4}}$ -------------------------------52=_____

19Z-53. $\left[\dfrac{4820 - 3590 + \sqrt{1.50 \times 10^6 / 4.93}}{-12 + 18.5} \right]^{-4}$ ----------------53=_____

19Z-54. $(98.6)^2 \sqrt{(3.89)/(334)} - (791 + 182)$ -------------------54=_____

19Z-55. $\sqrt{\dfrac{(21900)(1.72 \times 10^5)}{(7220)(48600)}} - 2.69 + 1.06$ -------------------55=_____
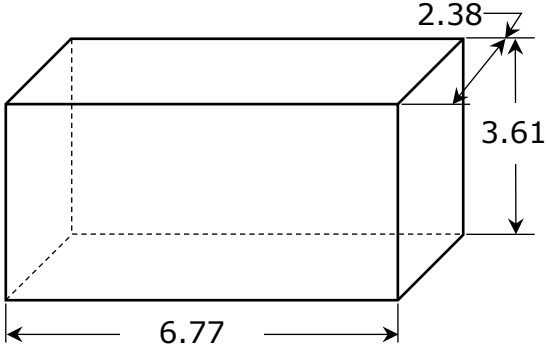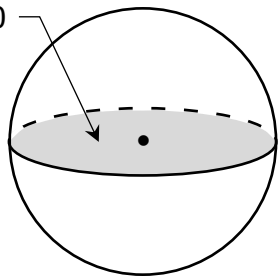
19Z-56. $0.979 + \sqrt{(137)/(87.9)} - (0.358 + 0.182)^2$ ----------------56=_____

19Z-57. $\sqrt{\dfrac{(22.5)(656)}{(19.7) + (59.1)}} - 14.7$ -----------------------------57=_____

19Z-58. $(\deg) \sin(1800°) + (38.7/20.7)$ ----------------------------58=_____

19Z-59.   A formula for calculating the final speed of an object dropping in a gravitational field is found by adding the initial speed to the product of the value of the acceleration due to gravity and the time for that acceleration. An object is thrown downward with an initial speed of 5.75 feet/second on the airless Moon where the acceleration due to gravity is 5.36 feet/second². If the object takes 2.75 seconds to land, what is the speed of the object upon landing? ---59=_____ ft/sec

19Z-60.   An equation, studied by many high school Physics students, is called the lens equation. It states that the reciprocal of the focal length of a lens is equal to the sum of the reciprocal of the object distance and the reciprocal of the image distance. If the focal length of a lens is 50 millimeters and the image distance is 51 millimeters, what is the object distance?---60=_____ meters

19Z-61. RECTANGULAR BOX	19Z-62. SPHERE
2.38 3.61 6.77 Total Surface Area = ?	Shaded Area 967000 Volume = ?
19Z-61=_____	19Z-62=_____

19Z-63. $\dfrac{25!}{22!}$ --63=_____

19Z-64. $(9.03\text{x}10^5 - 5.50\text{x}10^5)^{-8}(1.05\text{x}10^8)$ ----------------------64=_____

19Z-65.   (deg) $\dfrac{\cos(1.73°)}{3020}$ --65=_____

19Z-66.   (rad) $\dfrac{\cos(26.8)}{49.3/733}$ --66=_____

19Z-67.   (deg) $\sin(23.6° - 7.43°) + 0.124$ --------------------------67=_____

19Z-68.   (rad) $\sin[(52.7 - 47.4)(15.8)]$ --------------------------------68=_____

19Z-69.   (deg) $\dfrac{\sin(0.692°) - \tan(0.692°)}{\sin(0.692°)}$ ----------------------------69=_____

19Z-70. $(836 + 830 + 589)^{2/5}$ --------------------------------------70=_____

19Z-71.   The international Space Station (ISS) is currently 211 miles above the Earth's surface. If the radius of the Earth is 3960 miles and the ISS take 94.6 minutes to circle once around in orbit, how fast is the ISS moving in orbit around the Earth? --------------------------------------71=_____ mph

19Z-72.   If a light beam travels with the speed of 186,000 miles/second, how long does it take to travel 300 feet across a football field?-----------72=_____ s

19Z-73. SQUARE AND RECTANGLE	19Z-74. CUBE AND RIGHT CYLINDER CAVITY
Area BCDE = 2.4 x Square Area AD = ? 19Z-73=_____	Shaded Area = 4.25×10^9 Volume Remaining = ? 19Z-74=_____
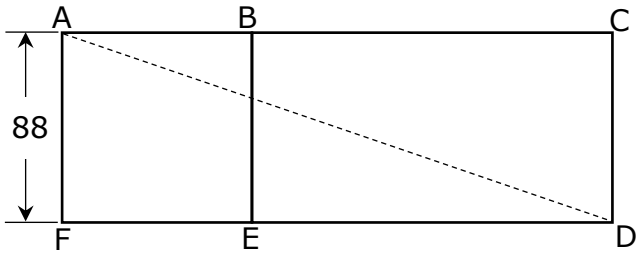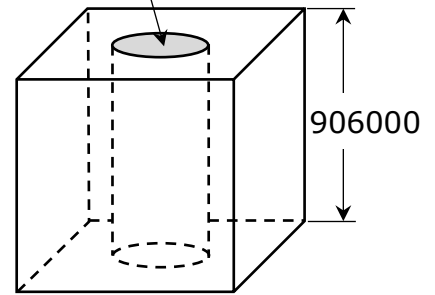
19Z-75. $\dfrac{0.792 + \sqrt{(0.336)(0.796)} + (0.453)(1.13)}{\sqrt{\sqrt{0.278 + 0.252}}}$ ----------------75=_____

19Z-76. $\dfrac{(2.26)^{0.407}(8.78)^{0.711}}{(1.19 - 0.46)^{-10}}$ ------------------------------------76=_____

19Z-77. $\mathrm{Log}\sqrt{\dfrac{6.36 - 1.36}{(11.4)(7.13)}}$ ---77=_____

19Z-78. $(179)^{\pi}(7.8)^5(150 - 140)^5$ ----------------------------------78=_____

19Z-79. $1 + 2 + 3 + \dots + 595$ --79=_____

19Z-80. $1 + (0.15) + \dfrac{(0.15)^2}{2} + \dfrac{(0.15)^3}{6} + \dfrac{(0.15)^4}{24}$ ----------------80=_____

2019 University Interscholastic League MS/JH Calculator Contest C Answer Key

19Z-1   = -467
       = -4.67×10^2

19Z-2   = -11.0
       = -1.10×10^1

19Z-3   = -690
       = -6.90×10^2

19Z-4   = -65.9
       = -6.59×10^1

19Z-5   = -438
       = -4.38×10^2

19Z-6   = 299
       = 2.99×10^2

19Z-7   = 2.04
       = 2.04×10^0

19Z-8   = -1.81
       = -1.81×10^0

19Z-9   = 3.54×10^6

19Z-10   = 4.28×10^{10}

19Z-11   = 4.43
       = 4.43×10^0

19Z-12   = 0.881
       = 8.81×10^{-1}

19Z-13   = 521
       = 5.21×10^2

19Z-14   = -4.73×10^7

19Z-15   = -27000
       = -2.70×10^4

19Z-16   = 1.04
       = 1.04×10^0

19Z-17   = 4.10
       = 4.10×10^0

19Z-18   = 2.58×10^6

19Z-19   = -0.907
       = -9.07×10^{-1}

19Z-20   = 0.146
       = 1.46×10^{-1}

19Z-21   = 2080
       = 2.08×10^3

19Z-22   = 10.4
       = 1.04×10^1

19Z-23   = -4.82
       = -4.82×10^0

19Z-24   = 0.752
       = 7.52×10^{-1}

19Z-25   = 17.31
       Dollar Answer

19Z-26   = 4840
       Integer Answer

19Z-27   = -489
       = -4.89×10^2

19Z-28   = 0.00647
       = 6.47×10^{-3}

19Z-29   = -2.04×10^{-13}

19Z-30   = 6.01×10^{-14}

19Z-31   = 0.00705
       = 7.05×10^{-3}

19Z-32   = 0.0328
       = 3.28×10^{-2}

19Z-33   = 0.00238
       = 2.38×10^{-3}

19Z-34   = 0.0347
       = 3.47×10^{-2}

19Z-35   = 0.429
       = 4.29×10^{-1}

19Z-36   = 11.4
       = 1.14×10^1

19Z-37   = 1.90
       = 1.890×10^0

19Z-38   = 0.599
       = 5.99×10^{-1}

2019 University Interscholastic League MS/JH Calculator Contest C Answer Key

19Z-39 $= 1.16 \times 10^7$

19Z-40 $= 1.55 \times 10^{13}$

19Z-41 $= 1.29 \times 10^9$

19Z-42 $= -5.03 \times 10^{11}$

19Z-43 $= 0.891$
$= 8.91 \times 10^{-1}$

19Z-44 $= 19.6$
$= 1.96 \times 10^1$

19Z-45 $= 3.41$
$= 3.41 \times 10^0$

19Z-46 $= 0.146$
$= 1.46 \times 10^{-1}$

19Z-47 $= 3.41 \times 10^6$

19Z-48 $= 428.50$
Dollar Answer

19Z-49 $= 45.0$
$= 4.50 \times 10^1$

19Z-50 $= 0.807$
$= 8.07 \times 10^{-1}$

19Z-51 $= 5.97 \times 10^{10}$

19Z-52 $= 12.8$
$= 1.28 \times 10^1$

19Z-53 $= 1.77 \times 10^{-10}$

19Z-54 $= 76.2$
$= 7.62 \times 10^1$

19Z-55 $= 1.65$
$= 1.65 \times 10^0$

19Z-56 $= 1.94$
$= 1.94 \times 10^0$

19Z-57 $= -1.01$
$= -1.01 \times 10^0$

19Z-58 $= 1.87$
$= 1.87 \times 10^0$

19Z-59 $= 20.5$
$= 2.05 \times 10^1$

19Z-60 $= 2.55$
$= 2.55 \times 10^0$

19Z-61 $= 98.3$
$= 9.83 \times 10^1$

19Z-62 $= 7.15 \times 10^8$

19Z-63 $= 13800$
$= 1.38 \times 10^4$

19Z-64 $= 4.36 \times 10^{-37}$

19Z-65 $= 0.000331$
$= 3.31 \times 10^{-4}$

19Z-66 $= -1.43$
$= -1.43 \times 10^0$

19Z-67 $= 0.402$
$= 4.02 \times 10^{-1}$

19Z-68 $= 0.883$
$= 8.83 \times 10^{-1}$

19Z-69 $= -7.29 \times 10^{-5}$

19Z-70 $= 21.9$
$= 2.19 \times 10^1$

19Z-71 $= 16600$
$= 1.69 \times 10^4$

19Z-72 $= 3.05 \times 10^{-7}$

19Z-73 $= 312$
$= 3.12 \times 10^2$

19Z-74 $= 7.40 \times 10^{17}$

19Z-75 $= 2.13$
$= 2.13 \times 10^0$

19Z-76 $= 0.281$
$= 2.81 \times 10^{-1}$

19Z-77 $= -0.606$
$= -6.06 \times 10^{-1}$

19Z-78 $= 3.45 \times 10^{16}$

19Z-79 $= 177000$
$= 1.77 \times 10^5$

19Z-80 $= 1.16$
$= 1.16 \times 10^0$

CONTESTANT NUMBER:

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   11.   a   b   c   d

2.   a   b   c   d   12.   a   b   c   d

3.   a   b   c   d   13.   a   b   c   d

4.   a   b   c   d   14.   a   b   c   d

5.   a   b   c   d   15.   a   b   c   d

6.   a   b   c   d   16.   a   b   c   d

7.   a   b   c   d   17.   a   b   c   d

8.   a   b   c   d   18.   a   b   c   d   *Questions #17- 20 only for Grades 4-8*

9.   a   b   c   d   19.   a   b   c   d

10.   a   b   c   d   20.   a   b   c   d

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

1.   a   b   c   d   5.   a   b   c   d

2.   a   b   c   d   6.   a   b   c   d

3.   a   b   c   d   7.   a   b   c   d

4.   a   b   c   d   8.   a   b   c   d

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.

a8	b8	c8	d8	e8	f8	g8	h8
a7	b7	c7	d7	e7	f7	g7	h7
a6	b6	c6	d6	e6	f6	g6	h6
a5	b5	c5	d5	e5	f5	g5	h5
a4	b4	c4	d4	e4	f4	g4	h4
a3	b3	c3	d3	e3	f3	g3	h3
a2	b2	c2	d2	e2	f2	g2	h2
a1	b1	c1	d1	e1	f1	g1	h1

Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	♔
Queen	♕
Rook	♖
Bishop	♗
Knight	♘
Pawn	**a-h** (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.

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

a) Black's b-pawn
b) Black's d-pawn
c) Black's c-pawn
d) All of the above

#5.
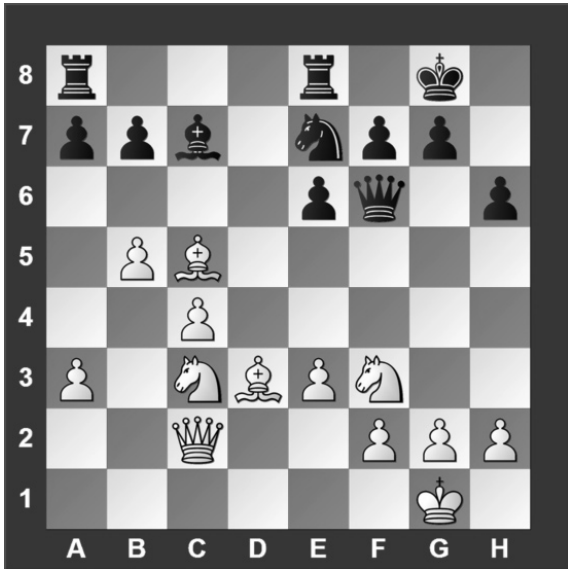
#6. White to move

Which side has material advantage?

a) White
b) It is even.
c) Black
d) It is not possible to tell.
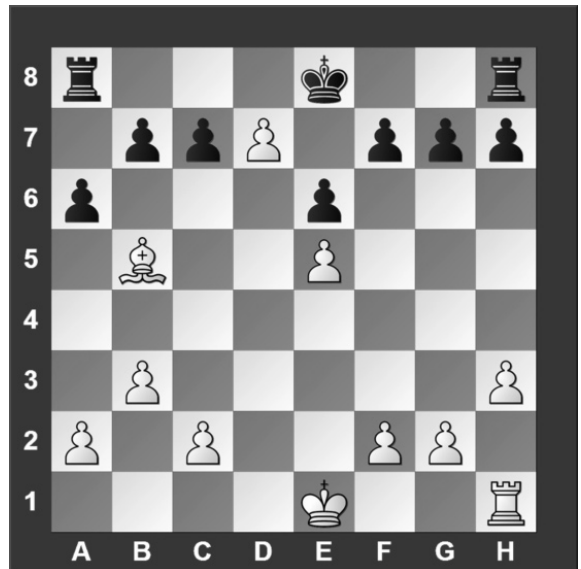
Which move is possible for Black?

a) Short Castle.
b) Long Castle.
c) Both A and B.
d) Neither A or B.

#7. White to move
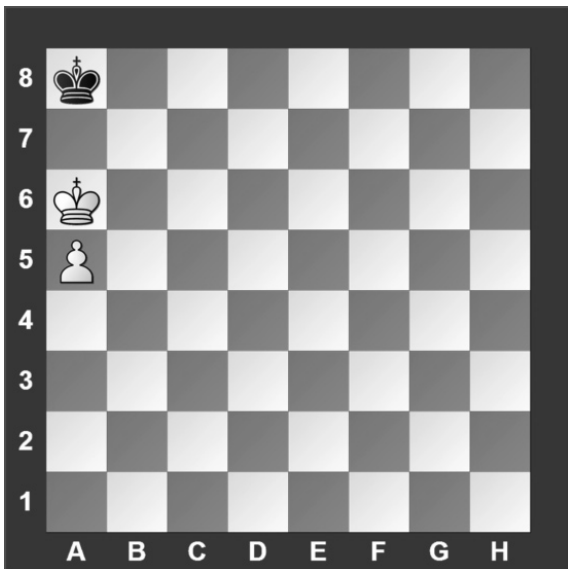
#8. White to move

What is the outcome of the game?

a) White wins
b) Black wins
c) Draw
d) Impossible to tell
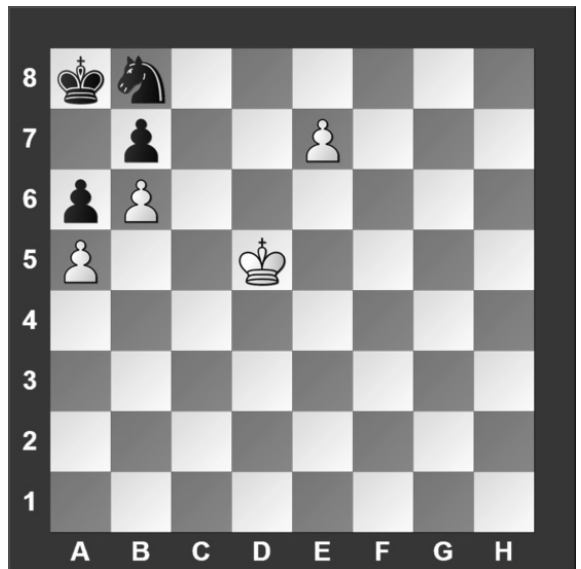
What is the best move?

a) Promote to a Queen
b) Promote to a Rook
c) Promote to a Knight
d) Move the King to d6

#9. White to move
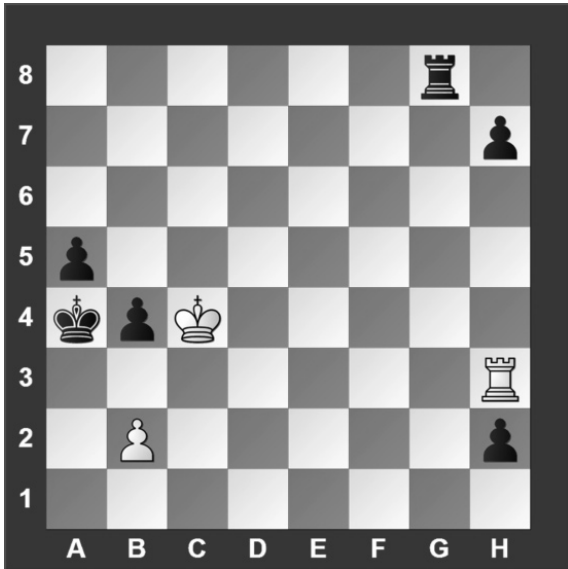
White can checkmate Black in two moves, what's the *first* move?

a) **b3**
b) **♖×h7**
c) **♖a3**
d) **♖×h2**

#10. White to move

What is White's best move?

a) **b×a7**
b) **b×c7**
c) **♕×a7**
d) **b7**

#11. White to move
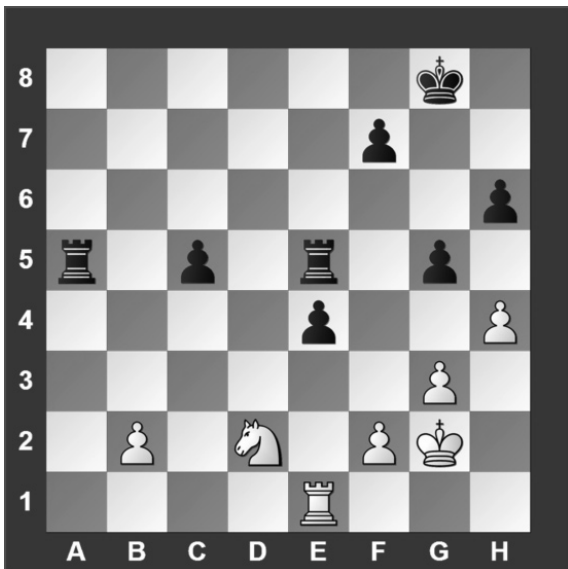
What is White's best move?

a) **♘×e4**
b) **♘c4**
c) **♖×e4**
d) **♘b3**

#12. White to move
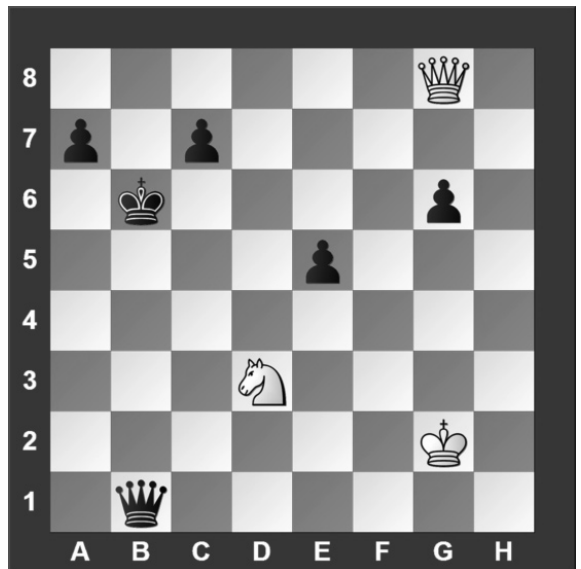
What is White's best move?

a) **♕b8**
b) **♕e6**
c) **♕×g6**
d) **♘×e5**

#13. White to move
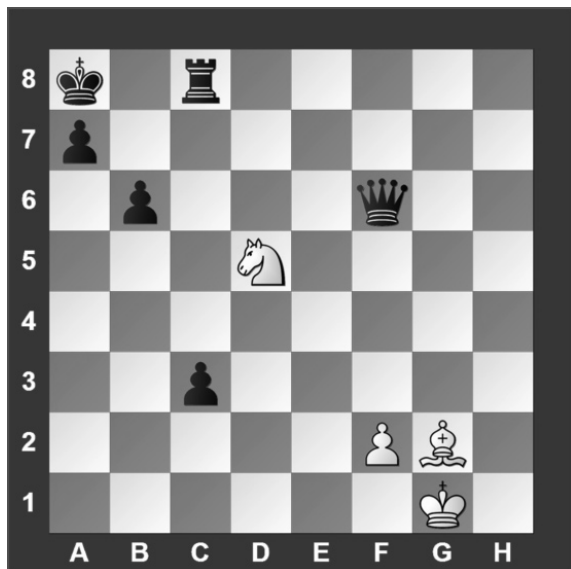
White can checkmate Black in two moves, what is the *first* move?

a) ♘×f6
b) ♘×b6
c) ♘c7
d) ♘b4
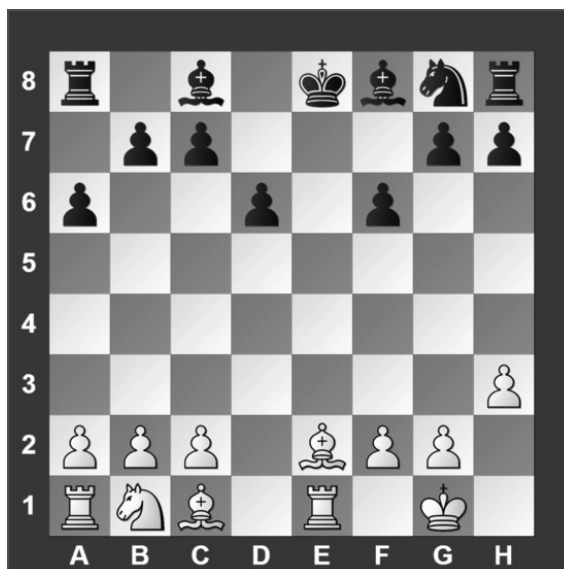
#14. White to move

What is White's best move?

a) ♗h5
b) ♗b5
c) ♗c4
d) ♘c3
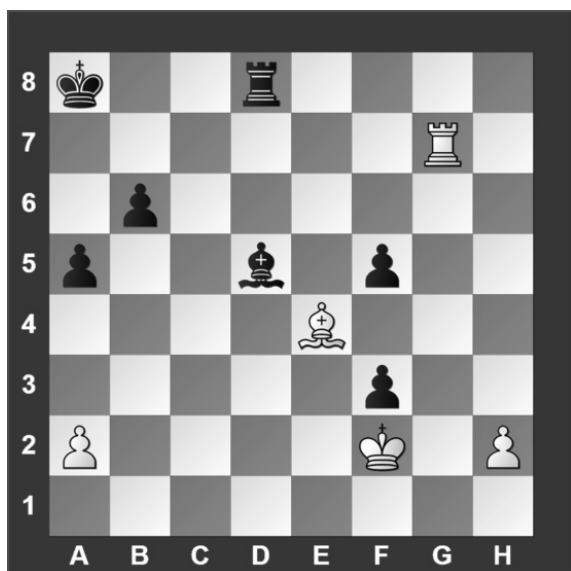
#15. White to move

What is White's best move?
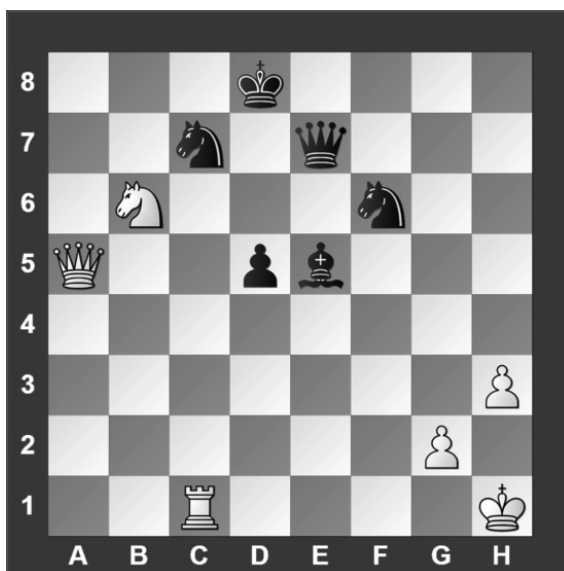
a) ♗×d5
b) ♗×f5
c) ♖g8
d) ♗×f3

#16. White to move

White can checkmate Black in two moves, what is the *first* move?
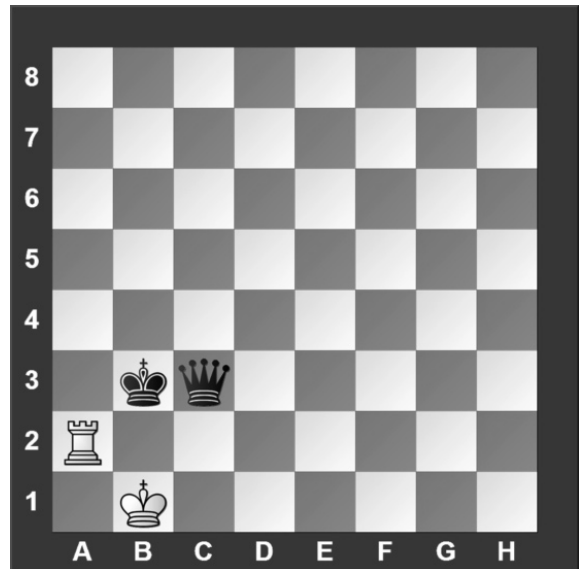
a) ♘×d5
b) ♕a8
c) ♖×c7
d) ♕×d5
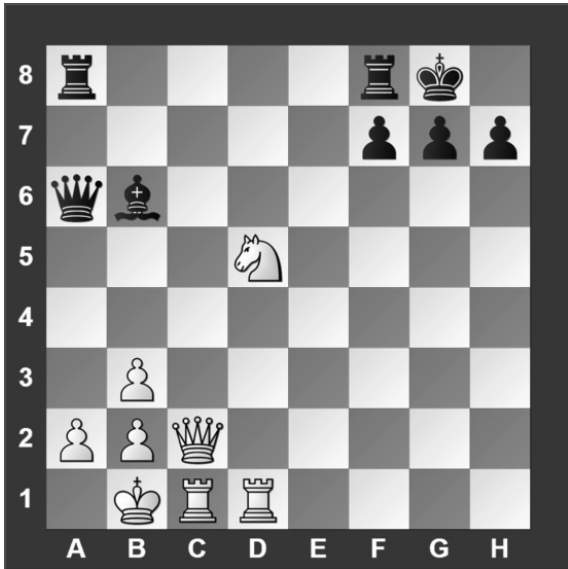
#17. White to move

White can checkmate Black in three moves, what is the *first* move?
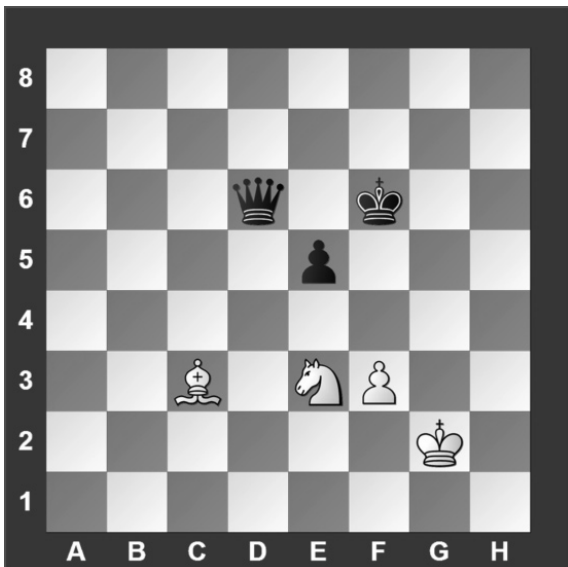a) ♘e7
b) ♕×h7
c) ♘f6
d) ♖g1

#18. White to move

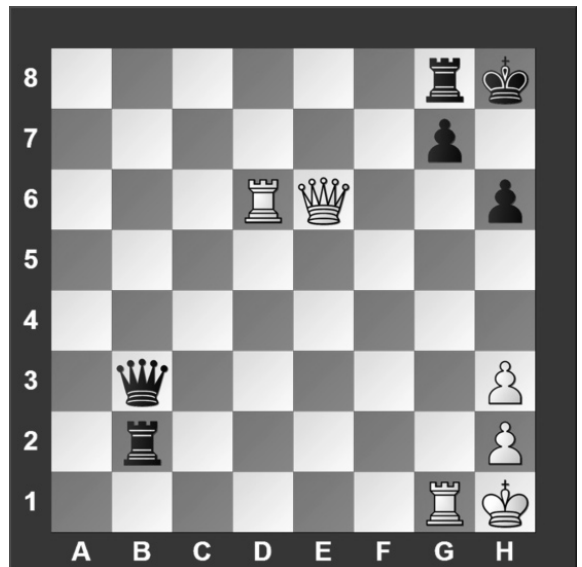What is White's best move?

a) ♖b2
b) ♖a8
c) ♖a3
d) ♖h2

#19. White to move

What is White's best move?

a) ♘g4
b) ♗×e5
c) f4
d) ♘c4

#20. White to move

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

a) ♕×g8
b) ♖×g7
c) ♕×h6
d) ♕g6

University Interscholastic League
A+ Chess Puzzle Contest
2018-2019 Invitational — Grades 6, 7, and 8
ANSWER KEY

Test

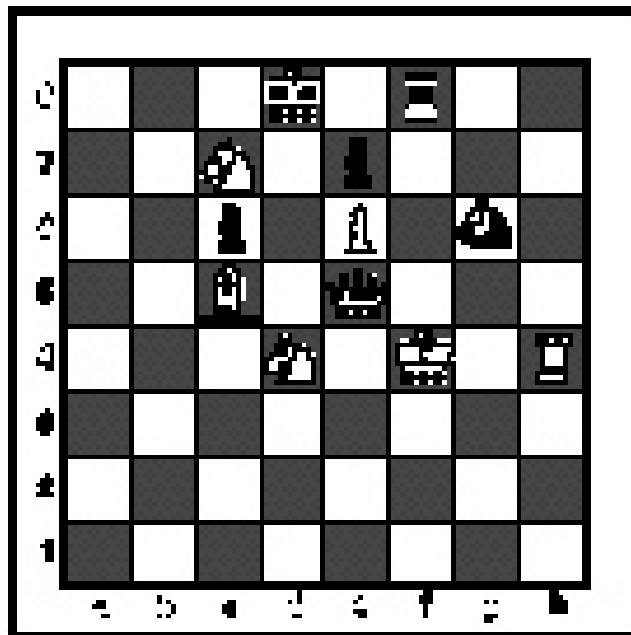|	
1. D	11. B
2. B	12. A
3. A	13. C
4. D	14. B
5. C	15. C
6. D	16. B
7. C	17. A
8. D	18. C
9. C	19. B
10. D	20. C

Tiebreaker

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

University Interscholastic League

Chess Puzzle Solving

TIEBREAKER - ALL GRADES

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**
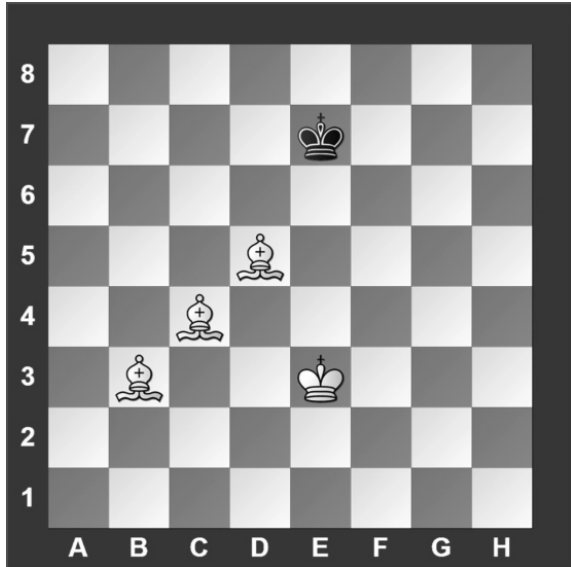
#1. White to move

What should be the outcome of the game?

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

#2. White to move
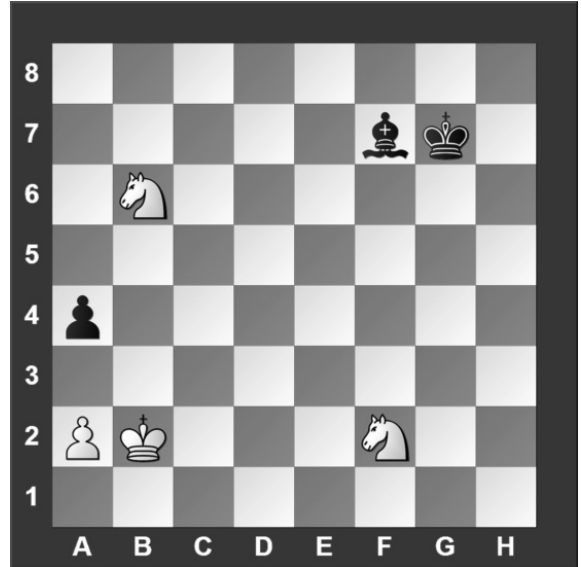
What is White's best move?

a) a3
b) ♘×a4
c) ♔a3
d) ♘e4

#3. White to move
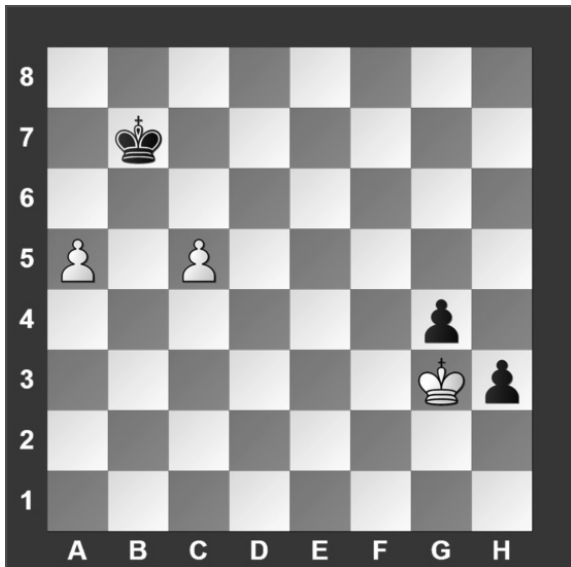
With the best play, what is the outcome of the game?

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

#4. White to move
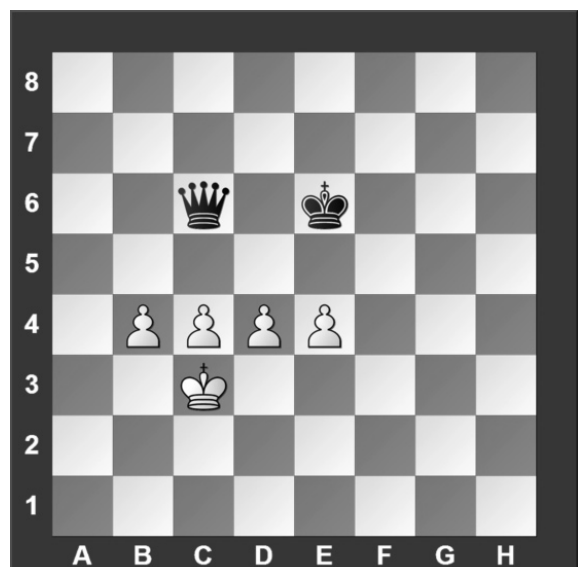
What is White's best move?

a) b5
b) c5
c) d5
d) e5

#5. White to move
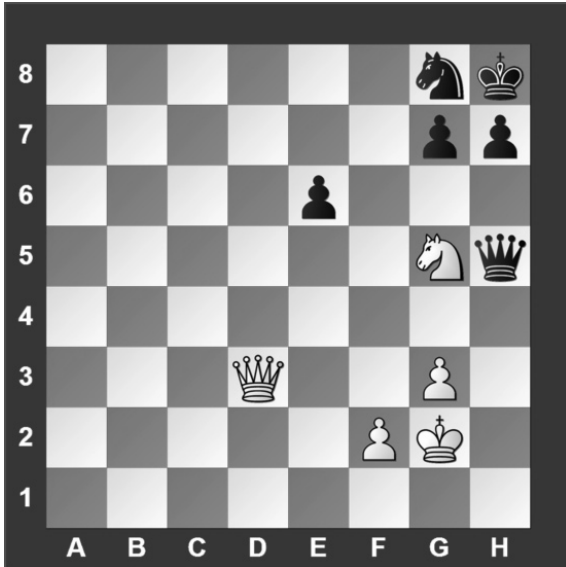
If White can checkmate Black in two moves, what is White's *first* move?

a) ♕xh7
b) ♘f7
c) ♘×e6
d) White can't checkmate Black in two moves.

#6. White to move
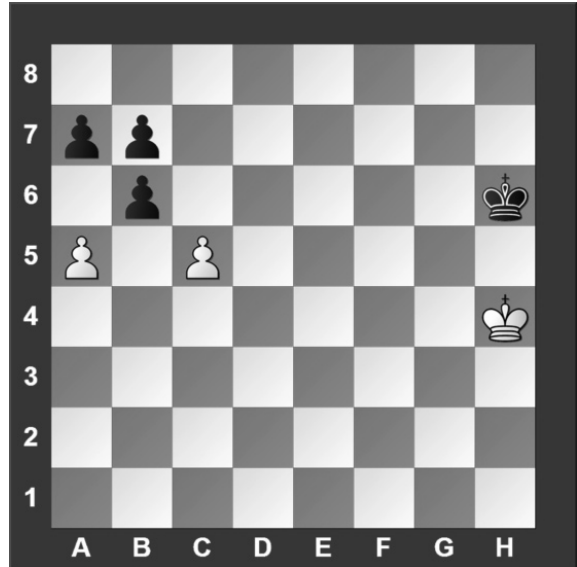
What is White's best move?

a) c6
b) c×b6
c) a×b6
d) a6

#7. White to move

If White can checkmate Black in two moves, what is White's *second* move?

a) ♕×b7
b) ♖c7
c) ♖×c8
d) ♗×b7

#8. 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.

A+ ACADEMICS

University Interscholastic League

Chess Puzzle Solving

grades 6, 7, 8

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

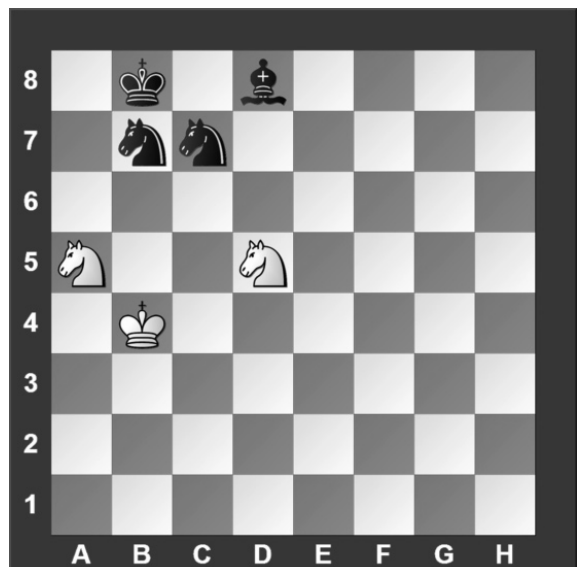# How to read and answer questions on this test

• 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.

a8	b8	c8	d8	e8	f8	g8	h8
a7	b7	c7	d7	e7	f7	g7	h7
a6	b6	c6	d6	e6	f6	g6	h6
a5	b5	c5	d5	e5	f5	g5	h5
a4	b4	c4	d4	e4	f4	g4	h4
a3	b3	c3	d3	e3	f3	g3	h3
a2	b2	c2	d2	e2	f2	g2	h2
a1	b1	c1	d1	e1	f1	g1	h1

Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	♔
Queen	♕
Rook	♖
Bishop	♗
Knight	♘
Pawn	**a-h** (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.

Which side has material advantage?

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

#5. White to move
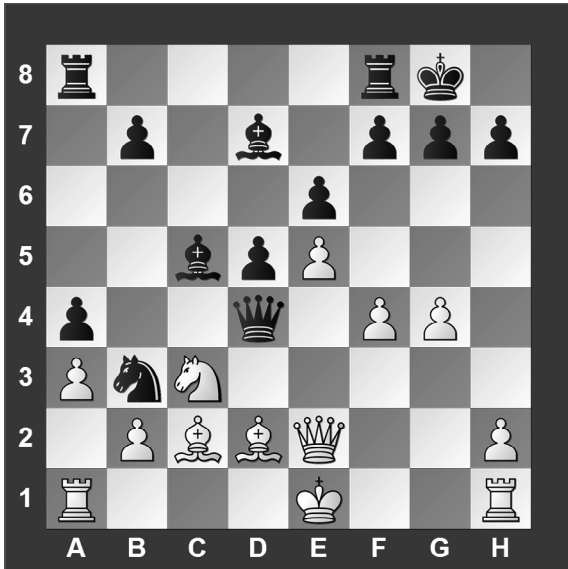
#6. White to move

Which move is possible for White?
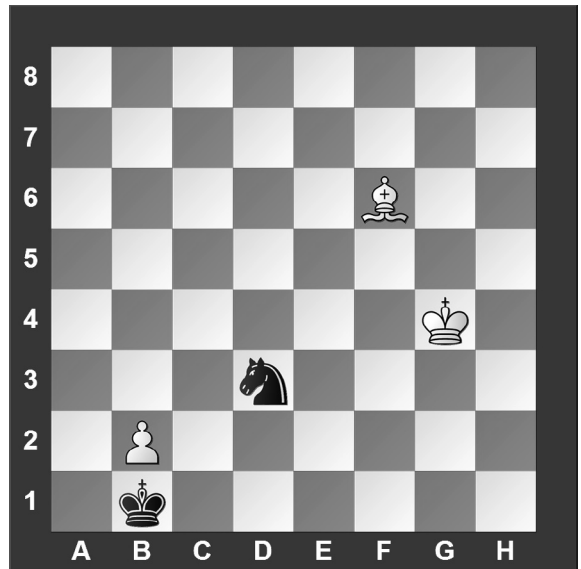
With the best moves, what is the outcome of the game?

a) Short Castle.
b) Long Castle.
c) Both A and B.
d) Neither A or B.

a) White wins.
b) Black wins.
c) Draw.
d) It is impossible to tell.

#7. White to move
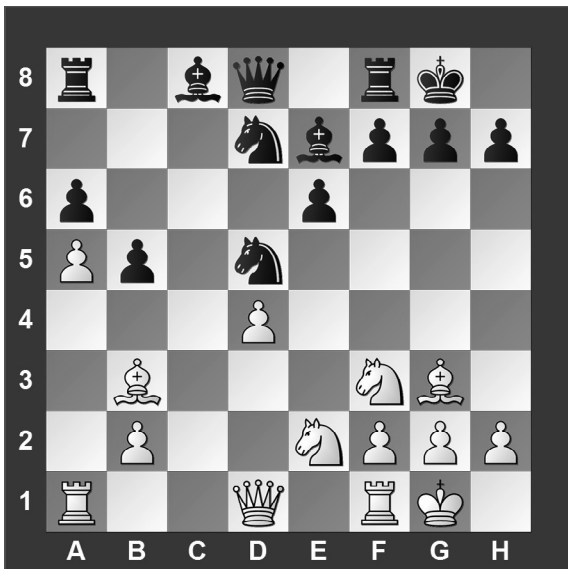
#8. White to move

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

a) Black's a-pawn.
b) Black's b-pawn.
c) Black's g-pawn.
d) White can't capture a pawn.
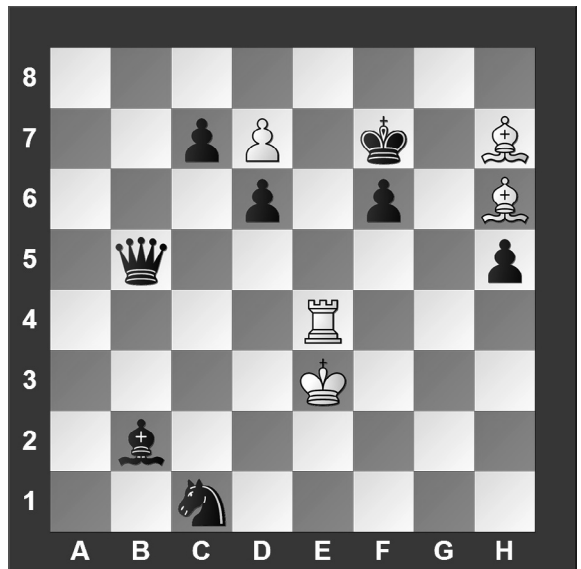
What piece should White promote to?

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

#9. White to move
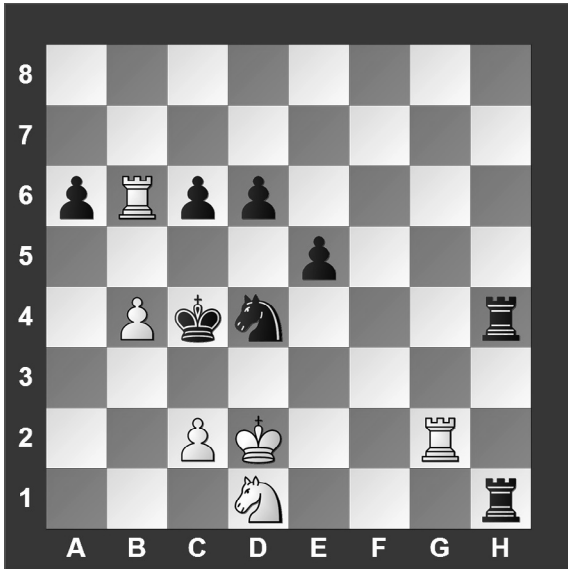
White can checkmate Black in one move, what's the move?

a) ♘b2
b) ♘e3
c) ♖×c6
d) ♘c3

#10. White to move
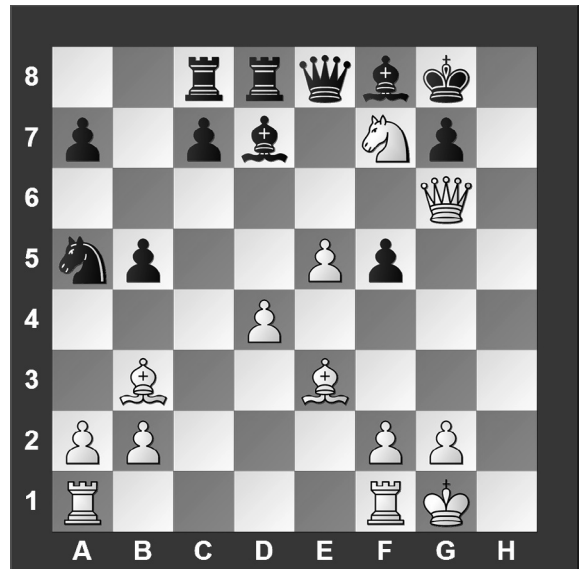
White can checkmate Black in two moves, what is the *first* move?

a) ♘h6
b) ♘×d8
c) ♘d6
d) ♘g5

#11. White to move
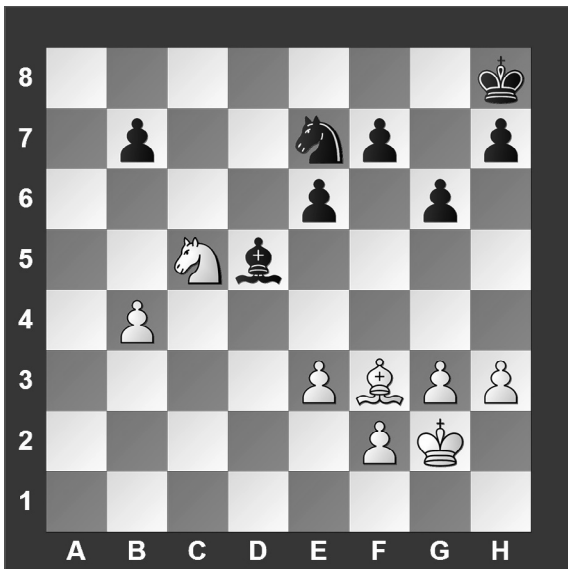
What is White's best move?

a) e4
b) ♘×b7
c) ♘d7
d) ♗×d5
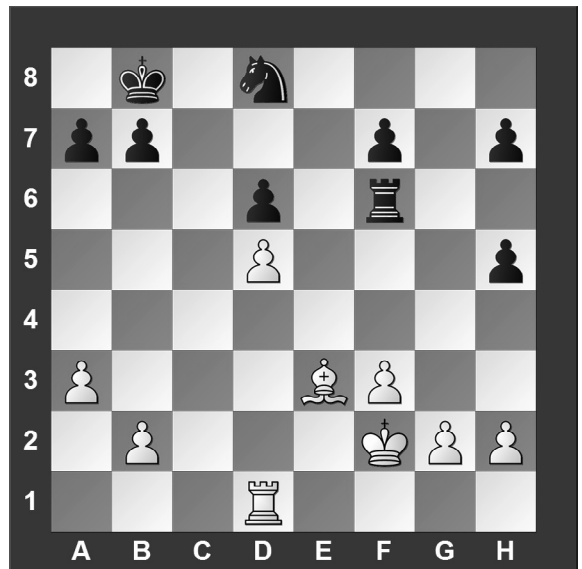
#12. White to move

What is White's best move?

a) ♗d4
b) ♗g5
c) ♖c1
d) g4

#13. White to move
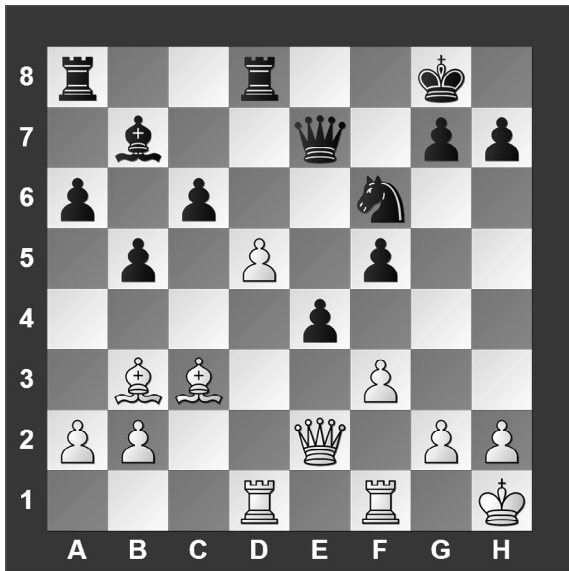
What is White's best move?

a) d×c6
b) ♗×f6
c) f×e4
d) d6

#14. White to move
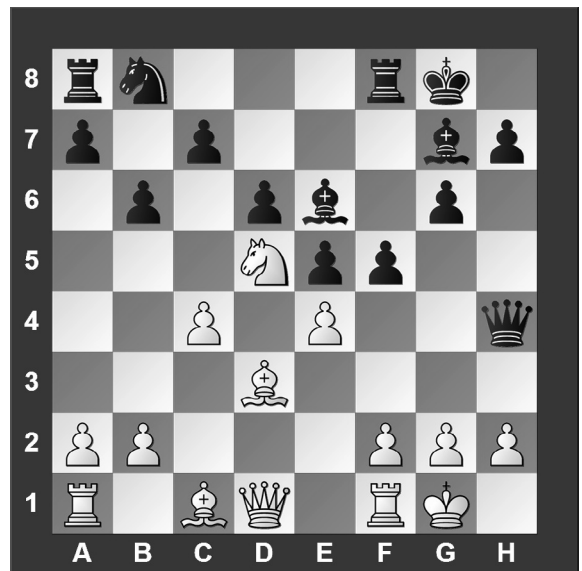
What is White's best move?

a) e×f5
b) g3
c) ♘×c7
d) f4

#15. White to move
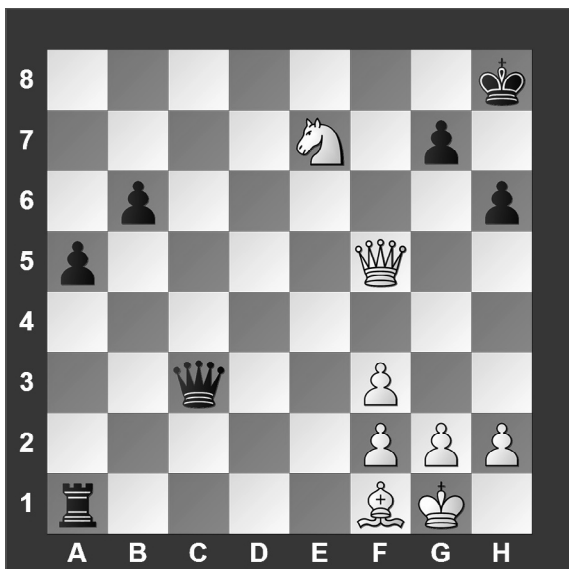
If White can checkmate Black in two moves, what's the *second* move?

a) ♕f8
b) ♕g8
c) ♘g6
d) ♕c8
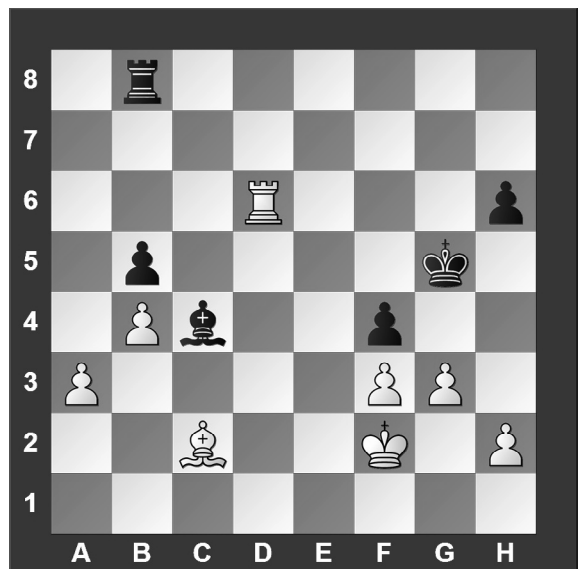
#16. White to move

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

a) ♖g6
b) h4
c) ♗g6
d) g4

#17. White to move
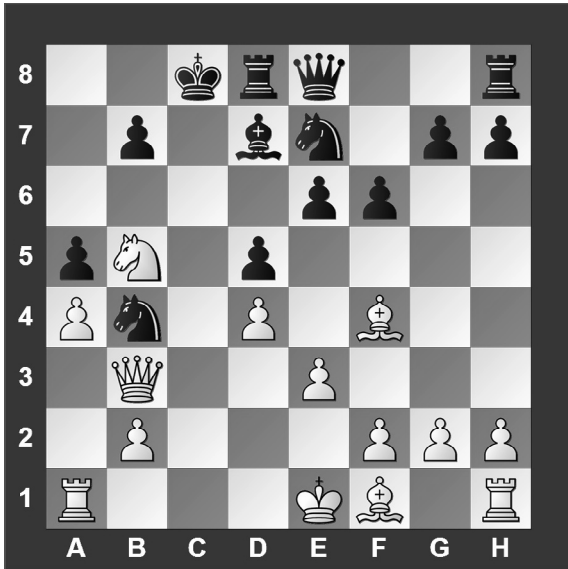
#18. White to move

What is White's best move?

a) ♘d6
b) ♖c1
c) ♘a7
d) ♘c7
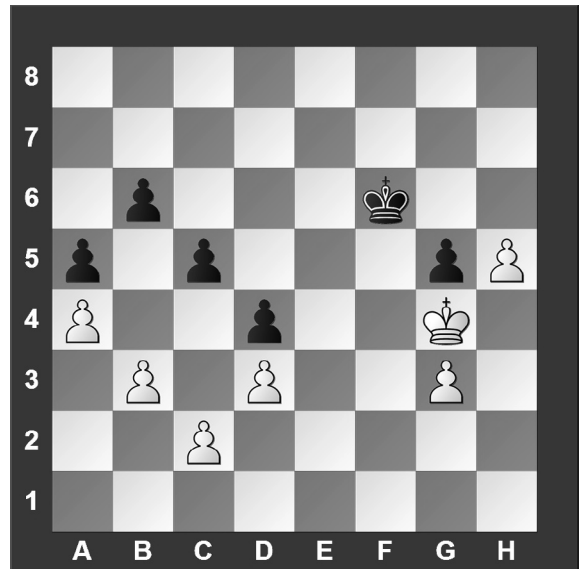
With the best moves, what is the out-come of the game?

a) White wins.
b) Black wins.
c) Draw.
d) It is impossible to tell.

#19. White to move

#20. White to move

What is White's best move?

a) ♕h6
b) ♕f4
c) ♖h6
d) d×c5

What is White's best move?

a) ♔f2
b) ♘×c6
c) ♘g6
d) ♖×c6

University Interscholastic League
A+ Chess Puzzle Contest
2018-2019 Fall/Winter District — Grades 6, 7, and 8
ANSWER KEY

Test

1. C
2. A
3. B
4. C
5. D
6. C
7. B
8. D
9. B
10. D

11. B
12. B
13. D
14. C
15. B
16. B
17. C
18. A
19. C
20. A

Tiebreaker

1. D
2. C
3. B
4. A

5. A
6. A
7. D
8. A

A+ ACADEMICS

University Interscholastic League
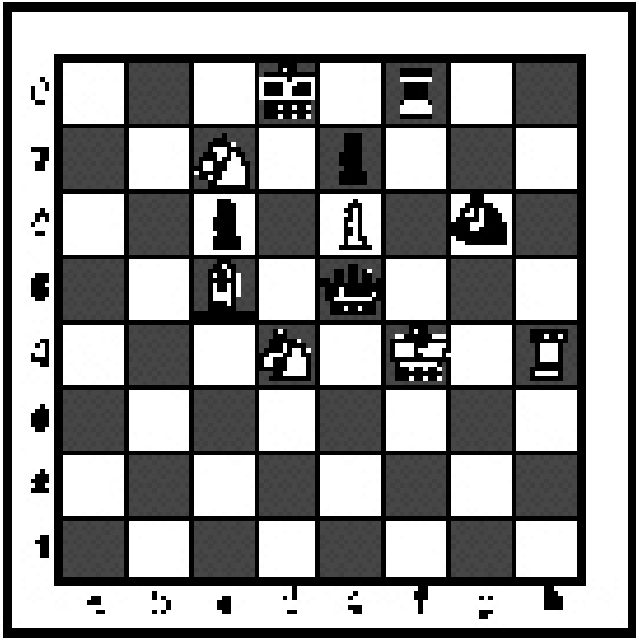
Chess Puzzle Solving

TIEBREAKER - ALL GRADES

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**
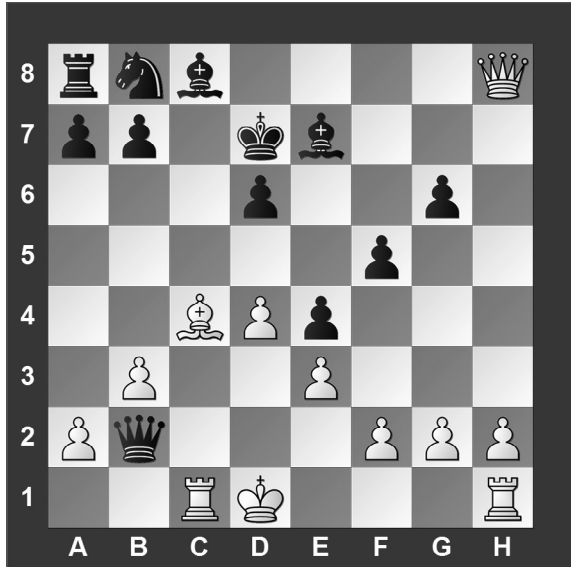
#1. White to move

What is White's best move?

a) ♗e6
b) ♗b5
c) ♗f7
d) ♕×c8

#2. White to move

if White can checkmate Black in three moves, what is the *second* move?

a) ♖h1
b) ♕f7
c) ♕e6
d) ♖h8

#3. White to move
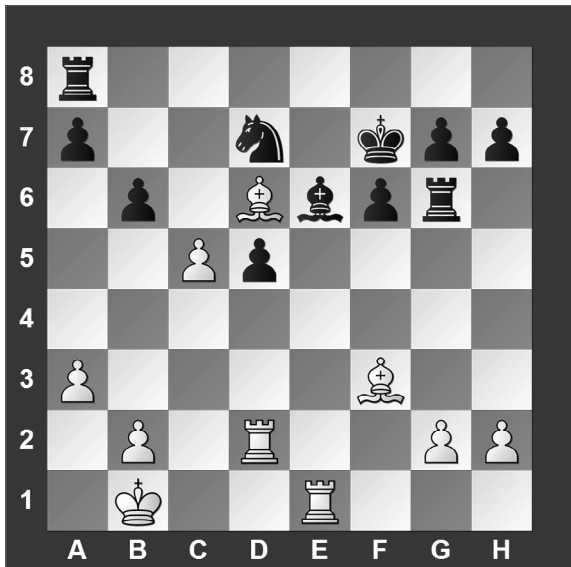
What is White's best move?

a) ♗×d5
b) ♖×e6
c) c×b6
d) ♗h5

#4. White to move
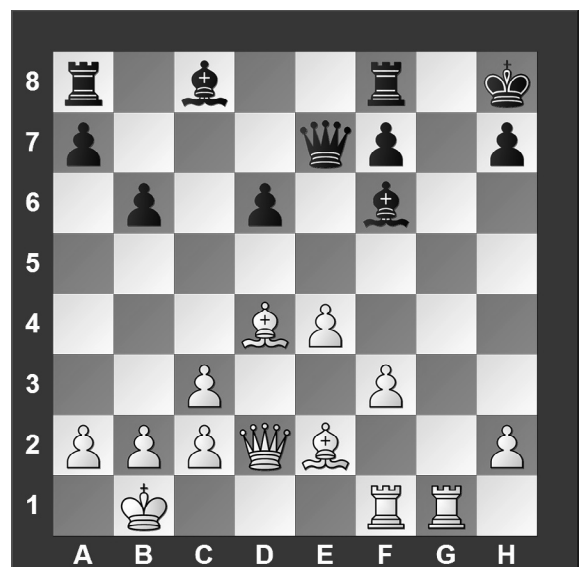
What is White's best move?

a) ♕g5
b) ♗×f6
c) ♕h6
d) ♕f4

#5. White to move
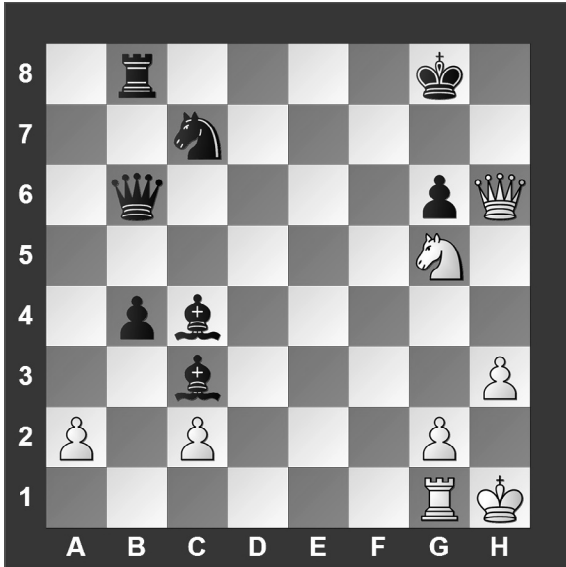
What is White's best move?

a) ♖f1
b) ♕h7
c) ♘h7
d) ♕×g6
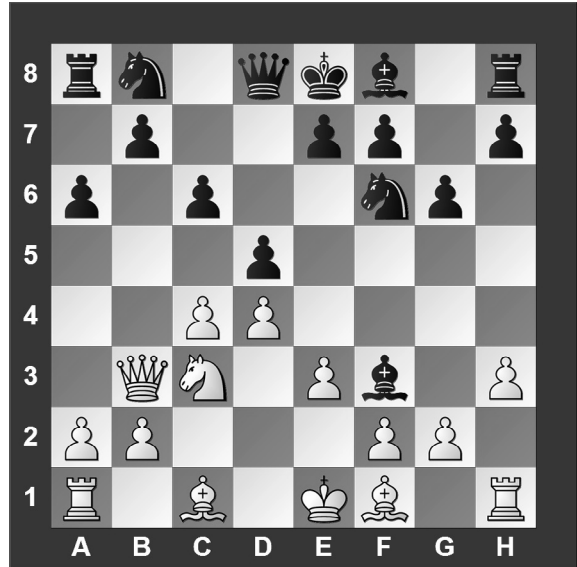
#6. White to move

What is White's best move?

a) ♕×b7
b) g×f3
c) c×d5
d) ♘a4

#7. White to move
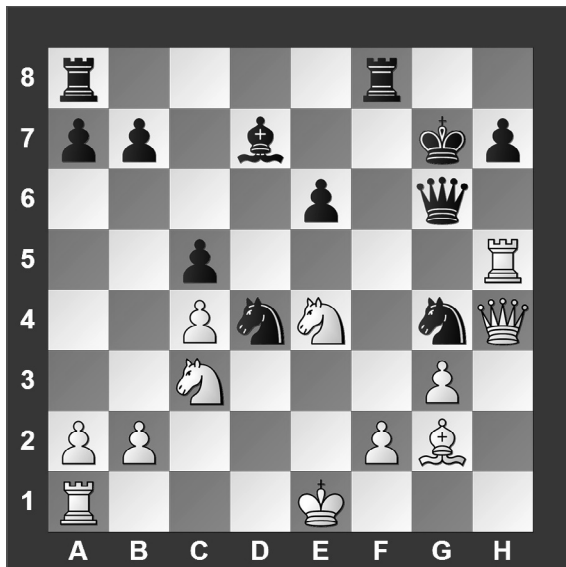
What is White's best move?

a) ♖×h7
b) ♘×c5
c) ♕e7
d) ♖g5

#8. White to move
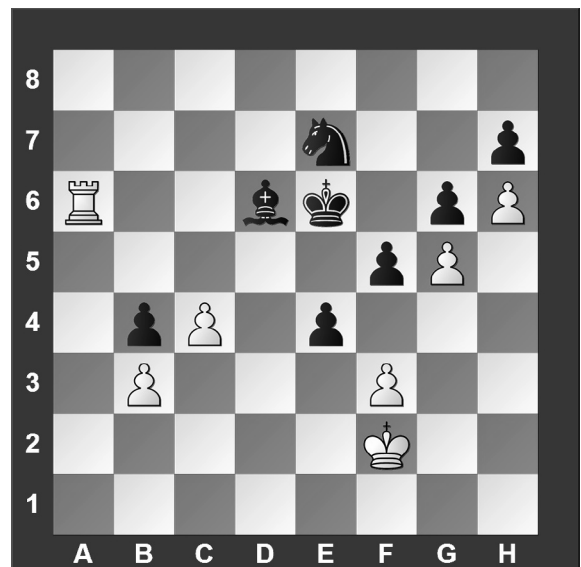
What is White's best move?

a) c5
b) f×e4
c) ♖×d6
d) f4

A+ ACADEMICS

University Interscholastic League
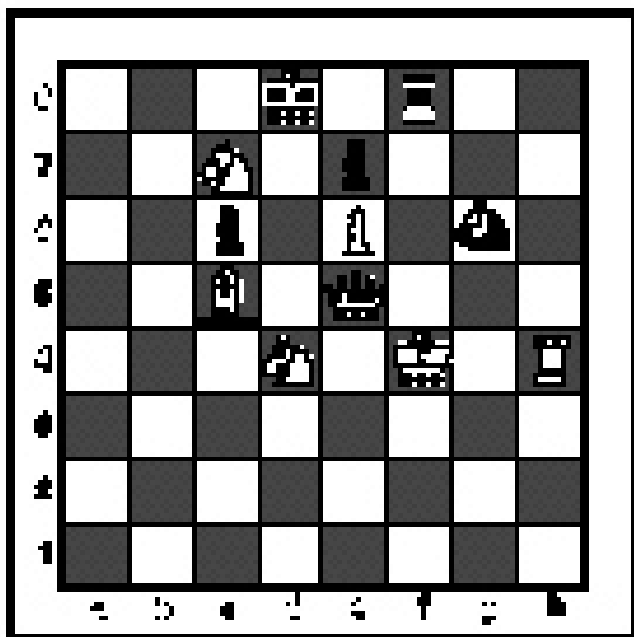
Chess Puzzle Solving
grades 6, 7, 8

**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.

Piece Names	Each chessman can also be represented by a symbol, except for the pawn. (Figurine Notation)
King	♔
Queen	♕
Rook	♖
Bishop	♗
Knight	♘
Pawn	**a-h** (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.

Which side has material advantage?

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

#5. Black to move
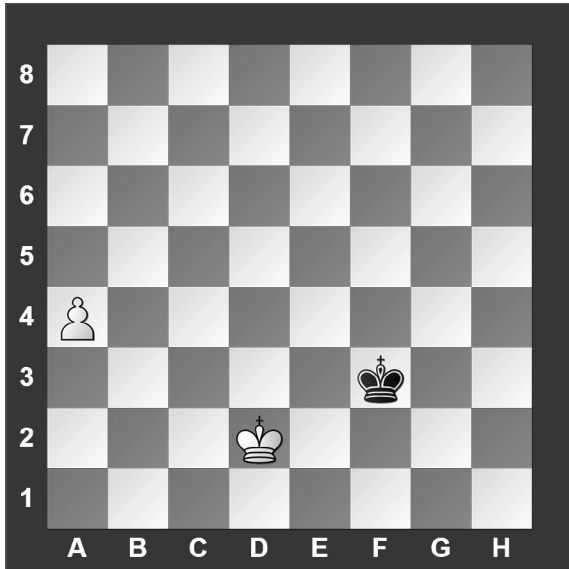
#6. White to move

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

a) White wins.
b) Draw.
c) Black wins.
d) It is not possible to tell.
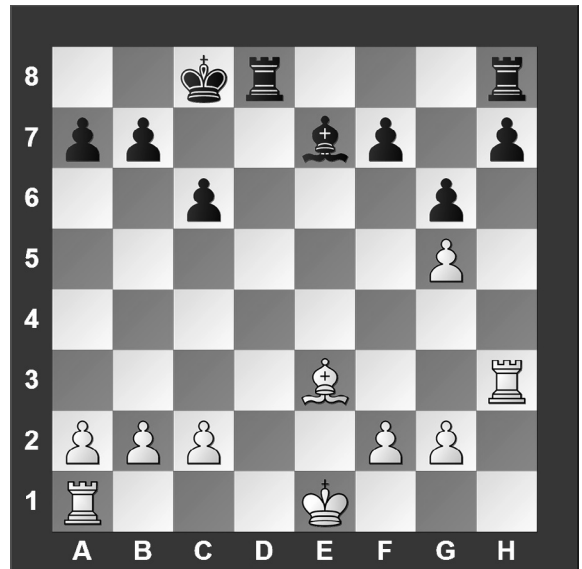
Which move is possible for Black?

a) Short Castle.
b) Long Castle.
c) Both A and B.
d) Neither A or B.

#7. White to move
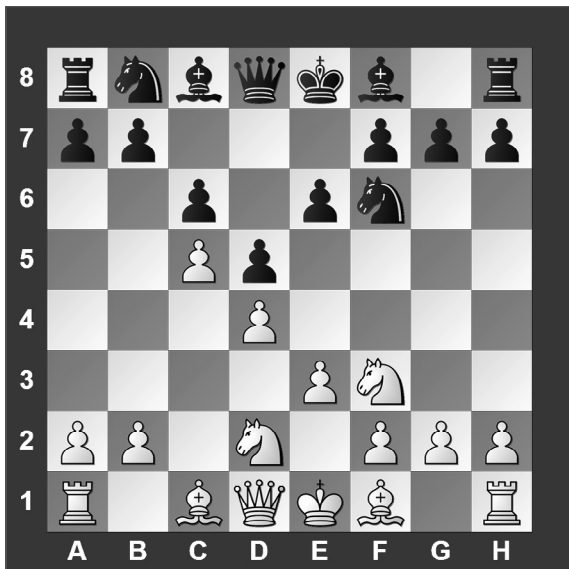
#8. White to move

Black just played d7 to d5. Which pawn can be captured?

a) Black's b-pawn
b) Black's d-pawn
c) Black's c-pawn
d) All of the above
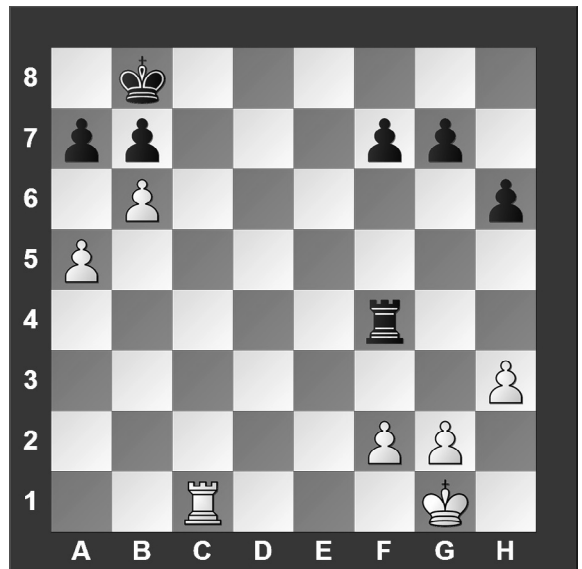
What is the best move?

a) b×a7
b) ♖c8
c) ♖c7
d) g3

#9. White to move
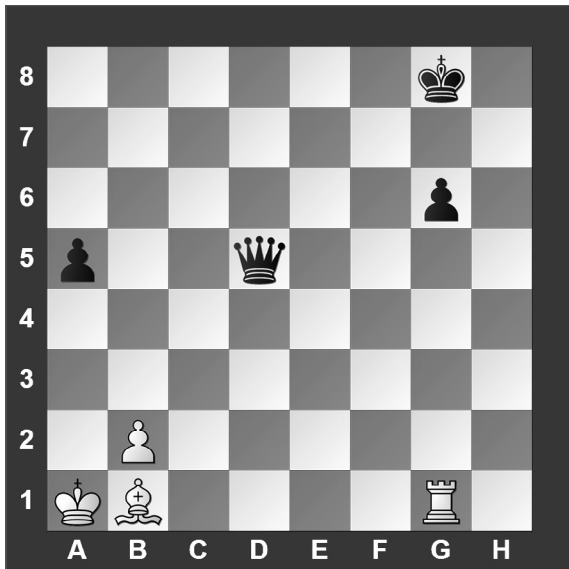
What is White's best move?

a) ♗a2
b) ♗×g6
c) ♖×g6
d) ♖g5

#10. White to move
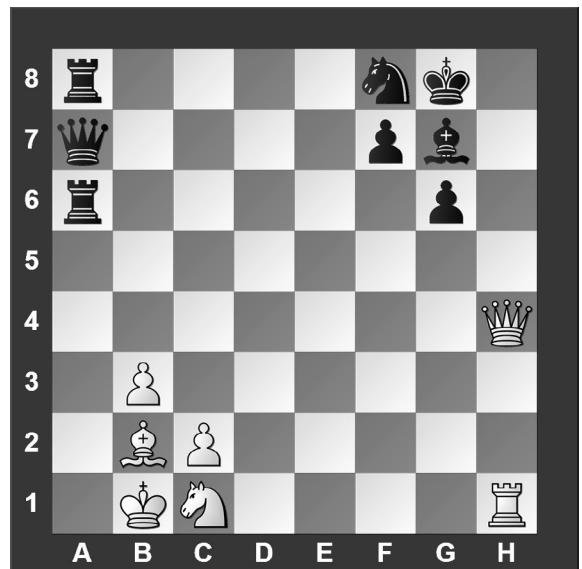
White can checkmate Black in two moves, what's the *first* move?

a) ♕h8
b) ♕h7
c) ♗×g7
d) ♕d8

#11. White to move
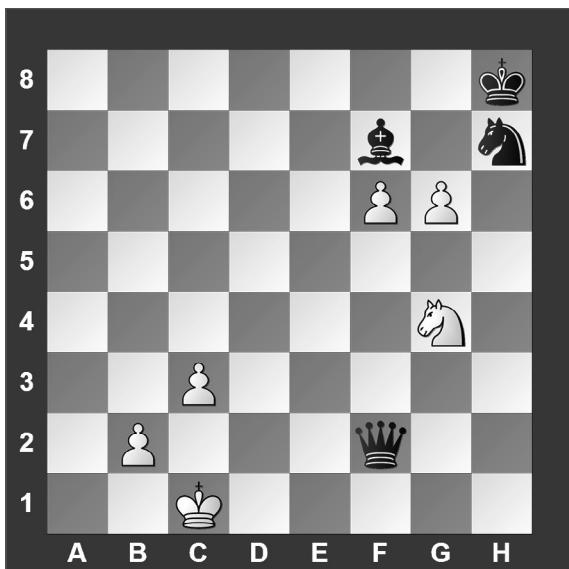
What is White's best move?

a) ♘×f2
b) g×f7
c) g×h7
d) g7

#12. White to move
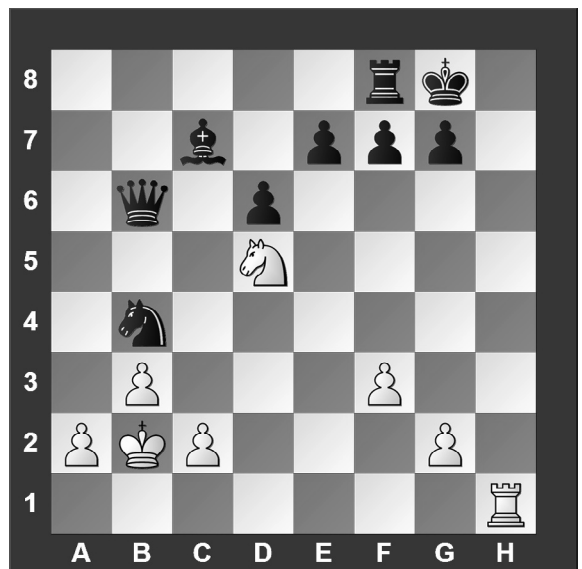
Which piece should White capture?

a) Queen.
b) Bishop.
c) Knight.
d) Pawn.

#13. White to move
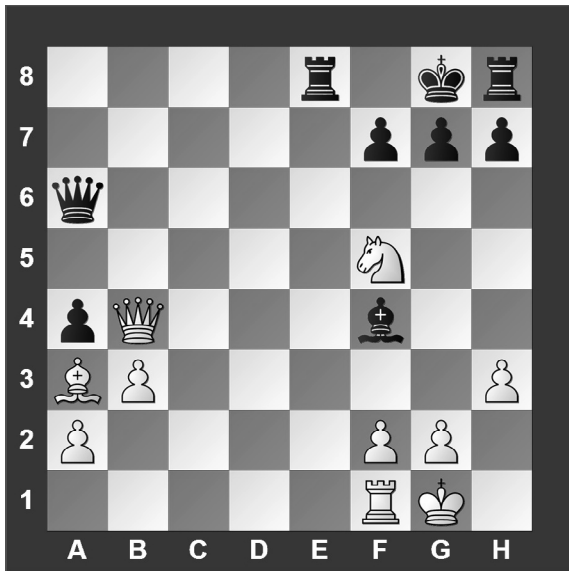
White can checkmate Black in two moves, what is the *first* move?

a) ♘h6
b) ♘e7
c) ♕f8
d) ♘×g7
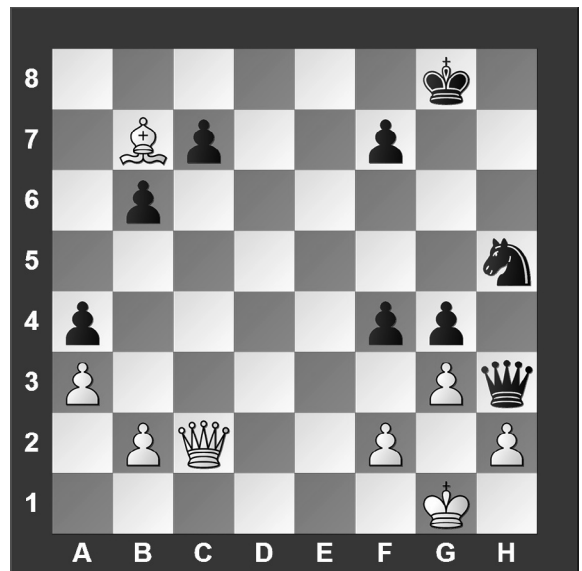
#14. White to move

What is White's best move?

a) ♗g2
b) ♕×c7
c) ♕×a4
d) ♕f5

#15. White to move
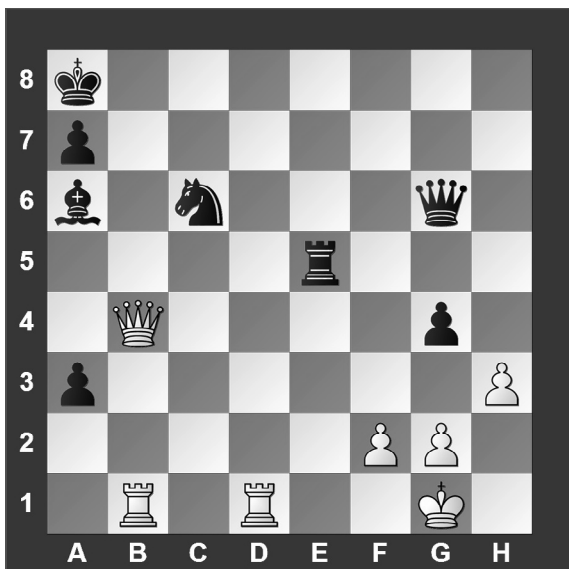
What is White's best move?

a) ♕b8
b) ♕b7
c) ♖d8
d) ♕f8

#16. White to move
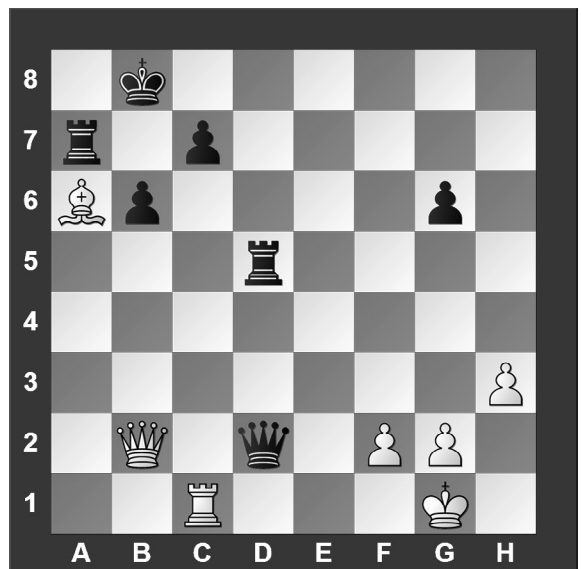
What is White's best move?

a) ♕h8
b) ♕×b6
c) ♖×c7
d) ♕×d2
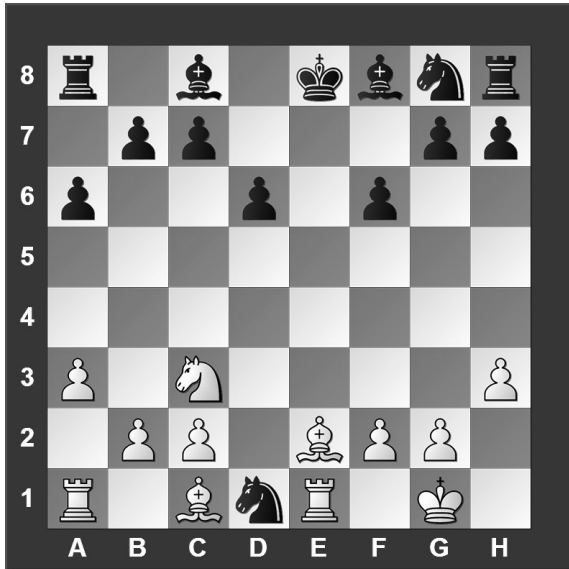
#17. White to move

What is White's best move?

a) ♗h5
b) ♗×d1
c) ♖×d1
d) ♗b5

#18. White to move
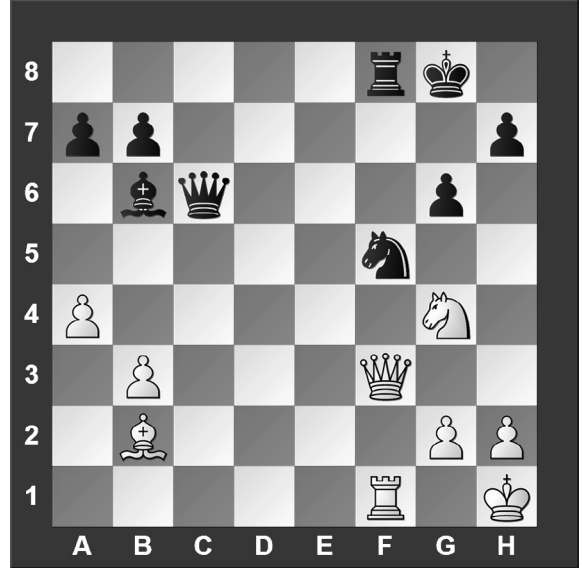
What is White's best move?

a) ♕×c6
b) ♘h6
c) ♕×f5
d) ♘f6

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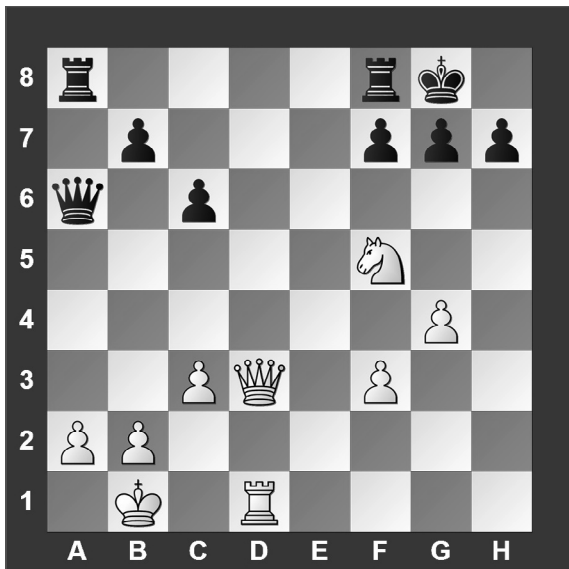
If White can checkmate Black in three moves, what's the *first* move?

a) ♘e7
b) ♘h6
c) ♘×g7
d) ♕×a6

#20. White to move
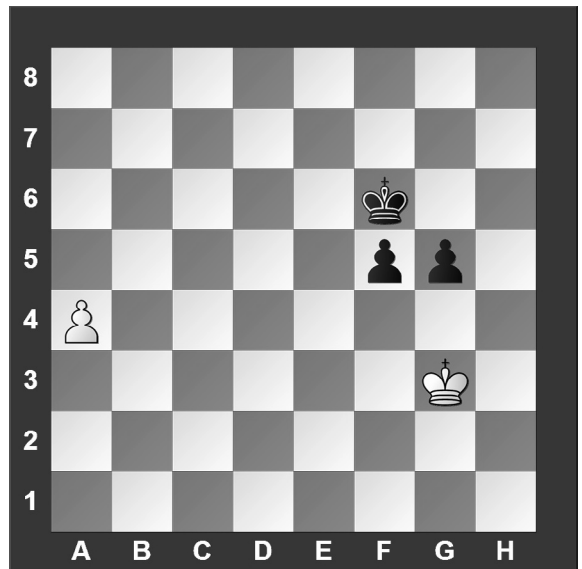
With the best moves, what is the outcome of the game?

a) White wins.
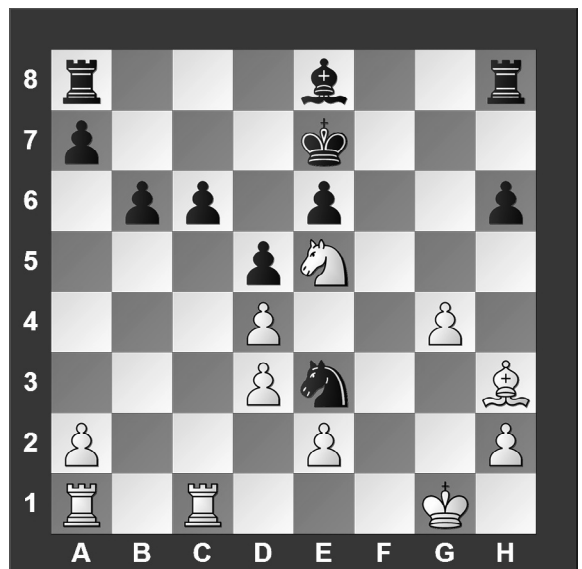b) Draw.
c) Black wins.
d) It is impossible to tell.

University Interscholastic League
A+ Chess Puzzle Contest
2018-2019 Spring — Grades 6, 7, and 8
ANSWER KEY

Test

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

Tiebreaker

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

A+ ACADEMICS

University Interscholastic League
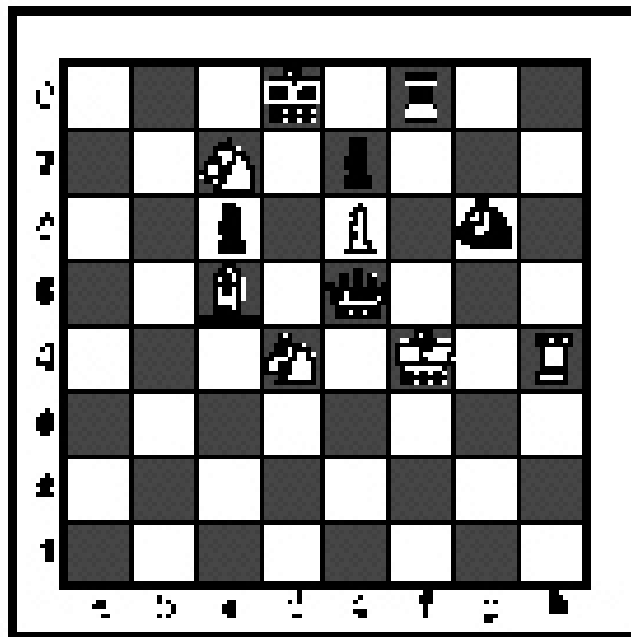
Chess Puzzle Solving

TIEBREAKER - ALL GRADES

**DO NOT OPEN TEST
UNTIL TOLD TO DO SO**
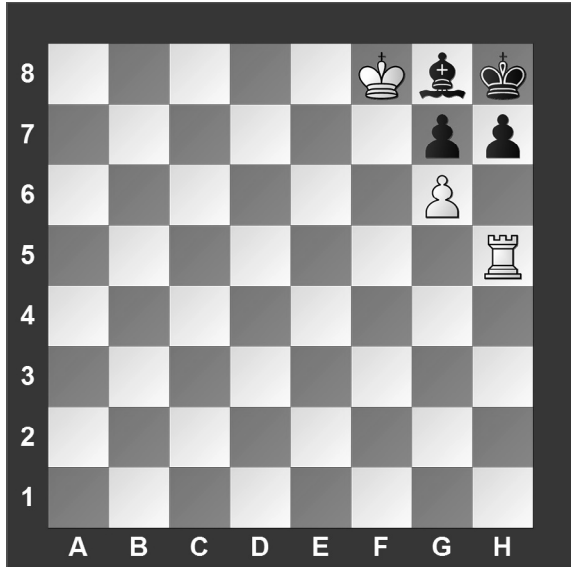
#1. White to move

What is White's best move?

a) g×h7
b) ♖×h7
c) ♖d5
d) ♖h6
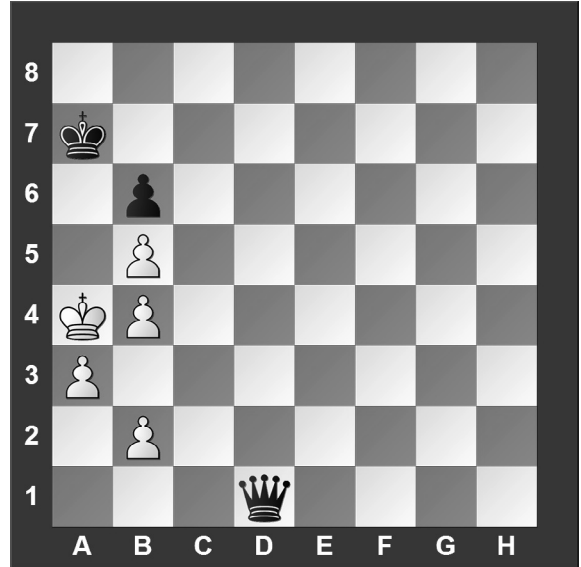
#2. White to move

What should be the outcome of the game?

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

#3. White to move
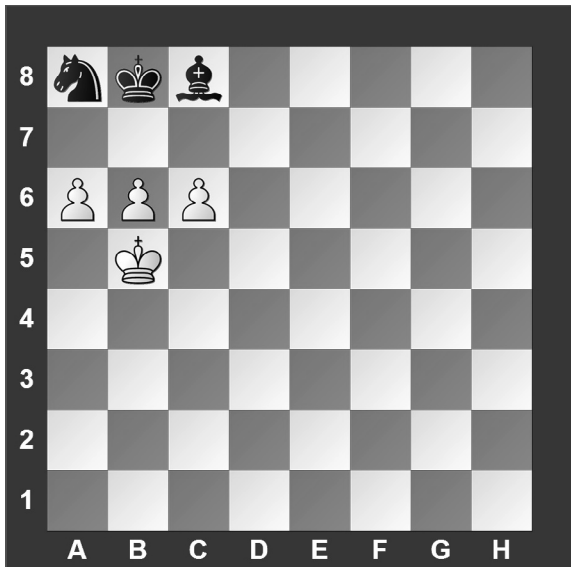
What is White's best move?

a) a7
b) c7
c) b7
d) ♔c5
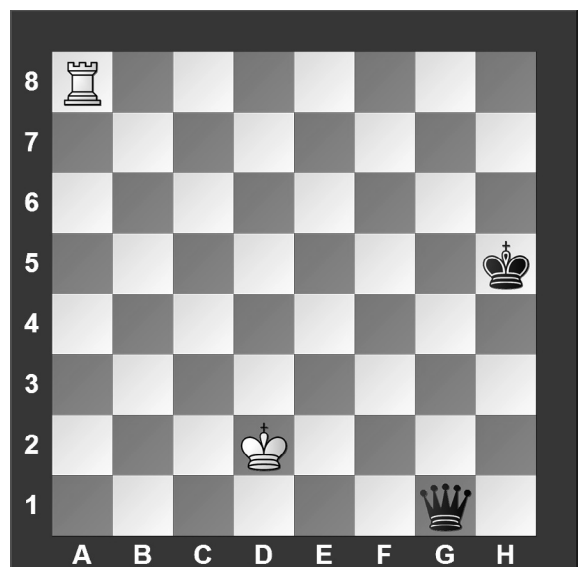
#4. White to move

What is White's best move?

a) ♖a5
b) ♖a1
c) ♖h8
d) ♖g8
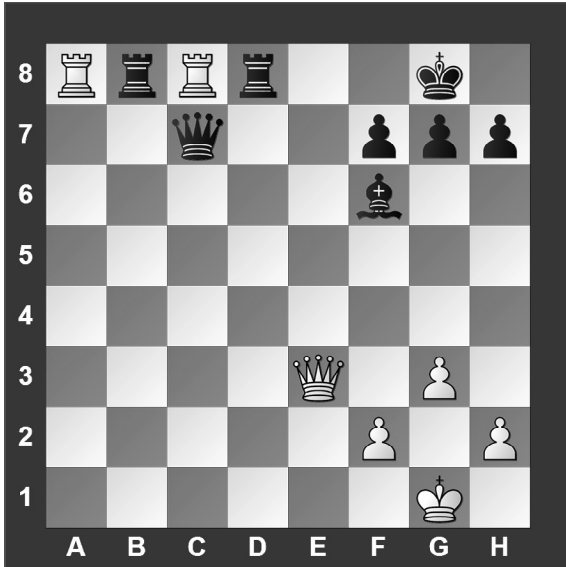
#5. White to move

What is White's best move?

a) ♖×d8
b) ♖×c7
c) ♕c5
d) ♕e8

#6. White to move

What is White's best move?

a) ♕a7
b) ♗a7
c) ♕×d3
d) ♕b6

#7. White to move
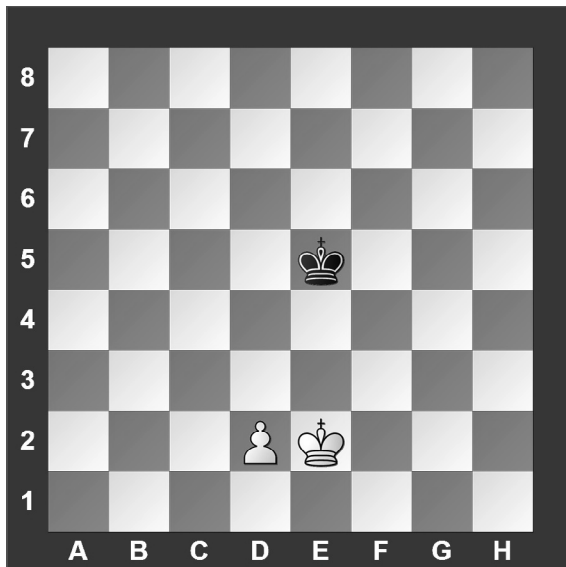
With the best play, what is the outcome of the game?

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

#8. White to move
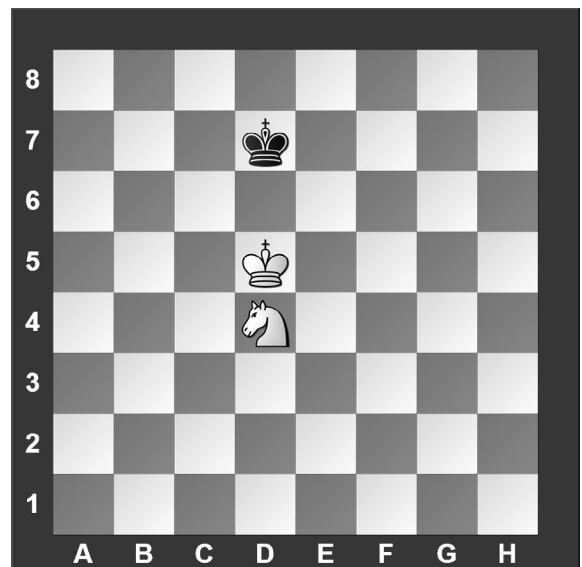
What is the outcome of the game?

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

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. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____
31. _____
32. _____
33. _____
34. _____
35. _____
36. _____
37. _____
38. _____
39. _____
40. _____

A+ ACADEMICS

University Interscholastic League

Dictionary Skills
grades 7 & 8

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

University Interscholastic League
2018-19 Dictionary Skills Contest
Invitational District Test — Grades 7 & 8

1. A diner is a restaurant in the shape of a what?
   - A. tunnel
   - B. pyramid
   - C. railroad car
   - D. lighthouse

2. How long is the Tennessee River?
   - A. 652 miles
   - B. 4002 miles
   - C. 1049 miles
   - D. 625 miles

3. Methylene blue is a dye used to reverse the effects of what type of poisoning?
   - A. food
   - B. cyanide
   - C. carbon monoxide
   - D. lead

4. In a no-hitter baseball game, the pitcher does not allow the opposition what type of hits?
   - A. fast
   - B. bounce
   - C. base
   - D. curve

5. How old would a person be if they were an octogenarian?
   - A. 74
   - B. 26
   - C. 66
   - D. 81

6. Auguste Piccard and Jacques Piccard are two Swiss scientist that developed what?
   - A. the bathyscaphe
   - B. the airplane
   - C. the stapler
   - D. the telephone

7. How many passengers does a roadster fit?
   - A. 1
   - B. 4
   - C. 2
   - D. 7

8. A person born or living in Madagascar is called what?
   - A. a Mada
   - B. a Malagasy
   - C. a Gasy
   - D. a Gascar

9. Amblyopia is reduced vision is one eye and is also called what?
   - A. cataract
   - B. retina
   - C. optic nerve disorder
   - D. lazy eye

10. What type of pattern is printed on a chintz?
    - A. rainbow
    - B. chevron
    - C. flowery
    - D. southwestern

11. What happens to a process or progress when it is expedited?
    A. it is cancelled
    B. it is sped up
    C. it is slowed down
    D. it is reversed

12. How many days in a row is the Roman Catholic devotion novena said?
    A. 9
    B. 6
    C. 19
    D. 5

13. Which of the following lakes is not part of the Great Lakes?
    A. Superior
    B. Ontario
    C. Erie
    D. Conroe

14. A Dane is a person that refers to someone born or living in what country?
    A. Dominica
    B. Danube
    C. Denmark
    D. Dhaka

15. What time zone is Utah located in?
    A. mountain time
    B. central time
    C. pacific time
    D. eastern time

16. How many zeros does the number septillion have?
    A. 24
    B. 20
    C. 16
    D. 30

17. What year did Pierre Curie win the Nobel Prize?
    A. 1974
    B. 1903
    C. 1930
    D. 1933

18. What would one be celebrating if they are celebrating a jubilee?
    A. a 10th birthday
    B. a new baby
    C. a retirement
    D. a 50th anniversary

19. Inst is the abbreviation for all the following **EXCEPT**?
    A. instant
    B. institution
    C. interest
    D. institutional

20. Where might you find a vanishing point?
    A. in a magic trick
    B. at an intersection
    C. in a drawing
    D. in cake mix

21. A rock, chair, and book are all examples of what?
    A. an inanimate object
    B. an indirect object
    C. a direct object
    D. a prepositional object

22. What disease is brought on by the bite of a blackfly?
   A. river blindness
   B. lupus
   C. arthritis
   D. cancer

23. Burnoose is derived from the Arabic word burnus, meaning what?
   A. burning wood
   B. sand storm
   C. bundle of sticks
   D. hooded cloak

24. If someone is convalescing, they are doing what?
   A. running late
   B. regaining strength
   C. traveling
   D. looking for a job

25. Foxe Basin is west of what island?
   A. Kauai
   B. Fiji
   C. Baffin
   D. Nunavut

26. How many people have authority in a triumvirate?
   A. 6
   B. 3
   C. 1
   D. 2

27. Which of the following is the lowest rank in the Air Force?
   A. airman basic
   B. jet fighter
   C. airman first class
   D. pilot

28. What is the abbreviation for he speaks/she speaks?
   A. hes
   B. hsss
   C. lhs
   D. loq

29. How many years did the former Swedish colony New Sweden exist?
   A. 18 years
   B. 17 years
   C. 55 years
   D. 30 years

30. If a boat or ship is in distress, what might be done to lighten the load?
   A. jettison
   B. deoxidize
   C. accelerate
   D. gobbling

31. Which of the following is the largest city in North Dakota?
   A. Bismarck
   B. Fargo
   C. Mandan
   D. Valley City

32. An accomplished pocket veto in a legislative bill is unsigned until what is over?
   A. the presidential election
   B. tax session
   C. session of legislature
   D. 6 months of term

_____ 33. episcopacy   A. a violent wind

_____ 34. provender   B. a collection of literary pieces

_____ 35. splutter   C. a confused noise

_____ 36. firkin   D. government of a church by bishops

_____ 37. tempest   E. a large lump or piece

_____ 38. anthology   F. a small wooden container or barrel

_____ 39. hunk   G. dry food for domestic animals

_____ 40. withe   H. a slender flexible branch or twig

University Interscholastic League
2018-19 Dictionary Skills Contest
Invitational Test — Grades 7 & 8

Answer Key

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

A+ ACADEMICS

University Interscholastic League
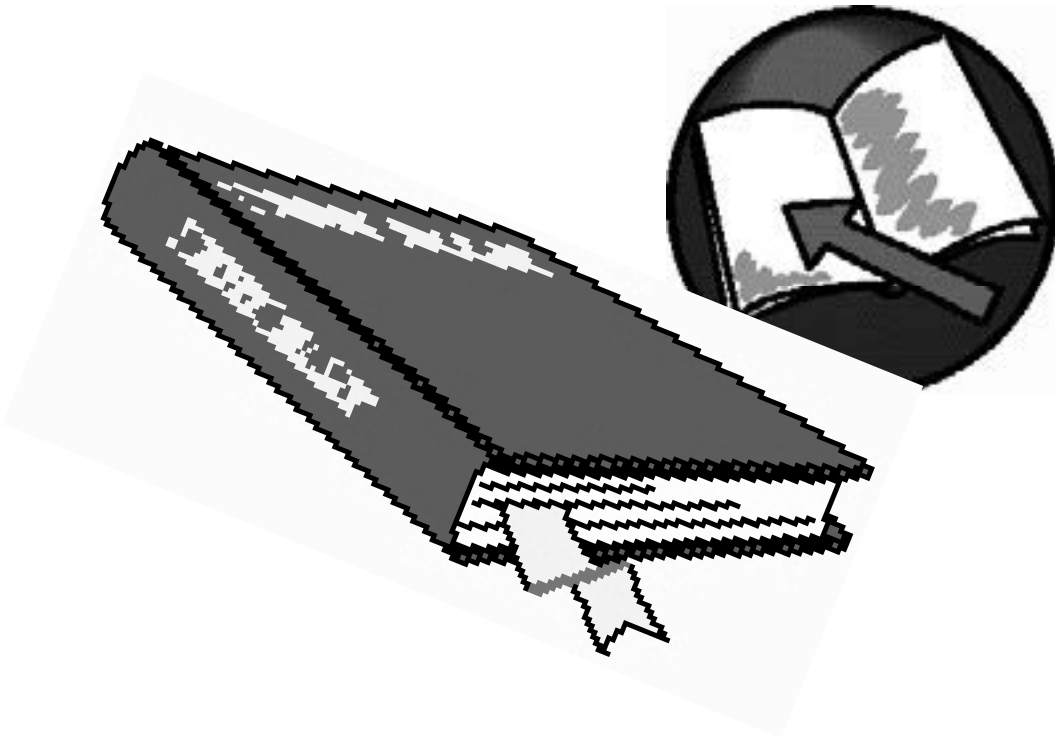
Dictionary Skills
grades 7 & 8

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

University Interscholastic League
2018-19 Dictionary Skills Contest
Fall/Winter District Test — Grades 7 & 8

1. A fish's swim bladder is a gas-filled expandable sac that serves to regulate what?
    - A. temperature
    - B. scale color
    - C. buoyancy
    - D. eyesight

2. Journalese is similar to the way of writing found in what?
    - A. newspapers
    - B. magazines
    - C. novels
    - D. pamphlets

3. What is the title name of the husband to a reigning queen?
    - A. principal
    - B. prince consort
    - C. governor
    - D. captain

4. A castanet shell can me made of all of the following materials **EXCEPT**?
    - A. clay
    - B. ivory
    - C. wood
    - D. plastic

5. Where is the birthplace of an Anglo-Americans ancestors?
    - A. China
    - B. Texas
    - C. Italy
    - D. England

6. When does rigor mortis happen to the muscles?
    - A. after a marathon
    - B. before lifting weights
    - C. after death
    - D. on your 13th birthday

7. What was Free State formerly know as?
    - A. Paid State
    - B. F-State
    - C. Free Orange State
    - D. Freetown

8. What department of the British government is concerned with funds to run the government?
    - A. parliament
    - B. exchequer
    - C. ministry of justice
    - D. secretary

9. What year did the Manchu people conquered China?
    - A. 1644
    - B. 1944
    - C. 1612
    - D. 1902

10. What was a travois used for by Plains Indians?
    - A. basket weaving
    - B. planting
    - C. hunting
    - D. load transportation

11. Who would you find living in a parsonage?
    A. rats
    B. a college student
    C. a pastor
    D. a marine

12. What branch of biology deals with fungi?
    A. ecology
    B. mycology
    C. zoology
    D. biophysics

13. What feeling would one most likely have towards someone if they sent a billet-doux?
    A. hate
    B. love
    C. sympathy
    D. confusion

14. A linnet seems especially fond of seeds from what plant?
    A. dandelion
    B. sunflowers
    C. larkspur
    D. flax

15. Morality play was especially popular in what centuries?
    A. 15th and 16th
    B. 17th and 18th
    C. 19th and 20th
    D. 12th and 13th

16. What is the period of rotation for Jupiter?
    A. 686.99 days
    B. 7 hours
    C. 9.92 hours
    D. 10.66 hours

17. What is the abbreviation for phenylketonuria?
    A. PH
    B. PKU
    C. phr
    D. py

18. What animals provide the food, chitterlings?
    A. hogs
    B. cows
    C. deer
    D. elk

19. How long is the Saint Gotthard road tunnel?
    A. 2 miles
    B. 10 kilometers
    C. 16 miles
    D. 10 miles

20. The Japanese art known as ikebana is the art of arranging what?
    A. furniture
    B. paintings
    C. flowers
    D. wind chimes

21. A privet is related to what plant?
    A. olive
    B. bamboo
    C. cotton
    D. jasmine

22. What is the title name for the governor of a division of ancient Persia?
    A. sultan
    B. king
    C. satrap
    D. chairman

23. Which of the following is an example of fermentation?
    A. reflection in a mirror
    B. souring of milk
    C. daylight savings time
    D. an apple falling from a tree

24. What type of object is a whirlybird?
    A. a cooking utensil
    B. a helicopter
    C. a gardening tool
    D. a child's toy

25. How many days after Easter is Ascension Day?
    A. 10
    B. 30
    C. 25
    D. 40

26. Pulmonary circulation starts on the right side of what organ?
    A. heart
    B. gallbladder
    C. pancreas
    D. uterus

27. All of the following are cities and ports **EXCEPT**?
    A. Georgetown
    B. Bujumbura
    C. Bergen
    D. Kingston

28. A terawatt is equal to how many trillion watts?
    A. 4
    B. 7
    C. 1
    D. 3

29. What grayish mineral can cause serious lung disease if inhaled as a dust?
    A. oxide
    B. phosphate
    C. asbestos
    D. calcite

30. How old might someone with Huntington's disease be?
    A. 6 months
    B. 16
    C. 5
    D. 27

31. Which of the following is an example of a pack animal?
    A. rat
    B. horse
    C. pigeon
    D. pig

32. Who was the 30th president of the United States?
    A. Calvin Coolidge
    B. Andrew Johnson
    C. James A. Garfield
    D. Millard Fillmore

Match each of the following words to its correct meaning:

_____ 33. collier   A. a late afternoon or evening church service

_____ 34. impinge   B. a vote in favor of something

_____ 35. salient   C. to make appear right or acceptable

_____ 36. vespers   D. sticking outward

_____ 37. yea   E. A coal miner

_____ 38. mew   F. located away from the wind

_____ 39. gloze   G. a small gull of Eurasia and western North America

_____ 40. leeward   H. to strike or dash especially with a sharp collision

University Interscholastic League
2018-19 Dictionary Skills Contest
Fall/Winter District — Grades 7 & 8

Answer Key

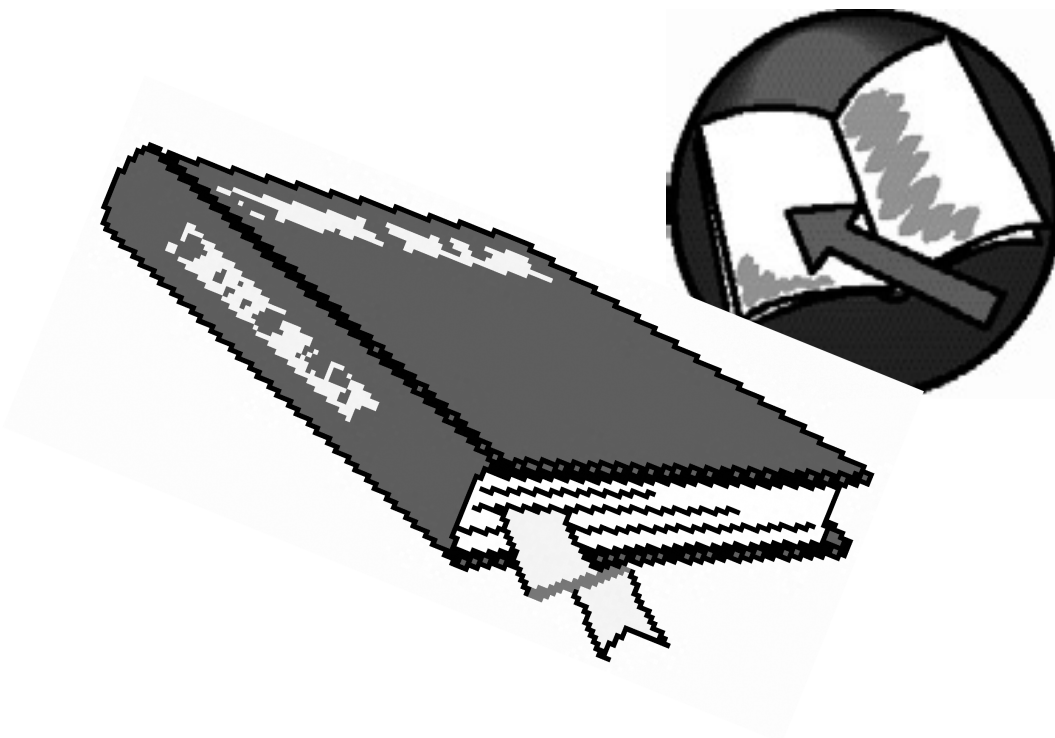|				
1.	C		21.	A
2.	A		22.	C
3.	B		23.	B
4.	A		24.	B
5.	D		25.	D
6.	C		26.	A
7.	C		27.	B
8.	B		28.	C
9.	A		29.	C
10.	D		30.	D
11.	C		31.	B
12.	B		32.	A
13.	B		33.	E
14.	D		34.	H
15.	A		35.	D
16.	C		36.	A
17.	B		37.	B
18.	A		38.	G
19.	D		39.	C
20.	C		40.	F

A+ ACADEMICS

University Interscholastic League
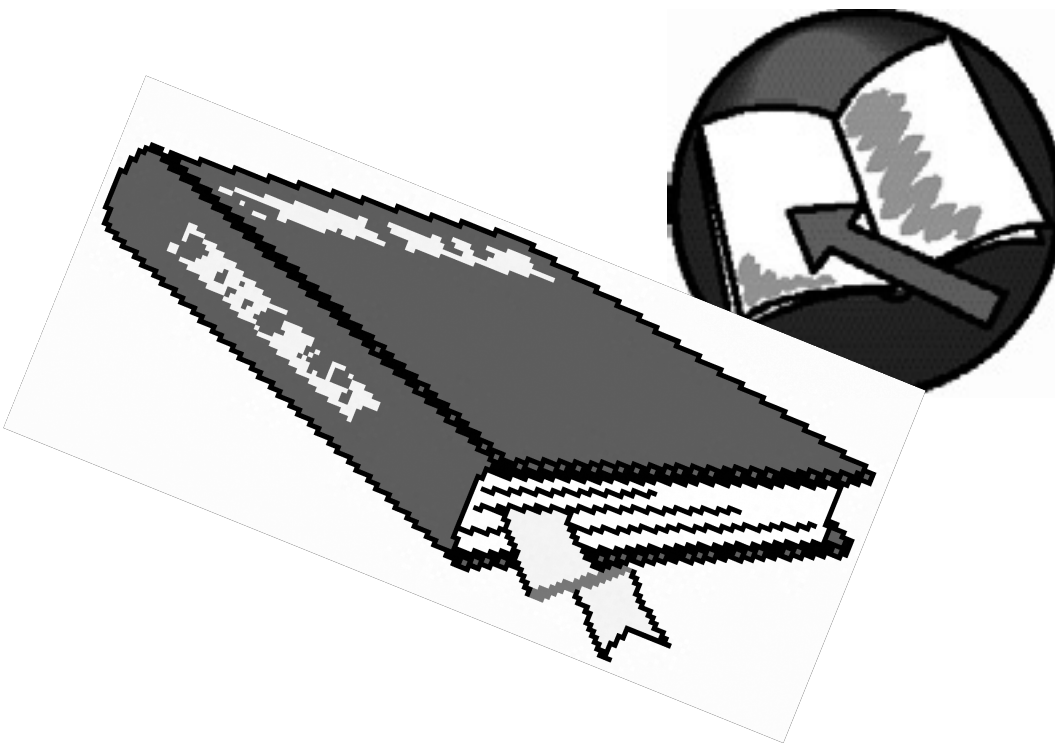
Dictionary Skills
grades 7 & 8

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

University Interscholastic League
2018-19 Dictionary Skills Contest
Spring District — Grades 7 & 8

1. A hydrophone is an instrument for listening to sound transmitted through what?
   - A. tunnels
   - B. underground
   - C. water
   - D. buildings

2. Which of the following gave the first clue to understanding hieroglyphics?
   - A. Rosetta stone
   - B. scrolls
   - C. recorder
   - D. patchwork

3. What is another name for monosaccharide?
   - A. metals
   - B. imported fire ant
   - C. simple sugar
   - D. sidearm

4. If a town is described as a one-horse town it is described as what?
   - A. large
   - B. small
   - C. popular
   - D. busy

5. What member of the family would be the matriarch?
   - A. father
   - B. sister
   - C. cousin
   - D. mother

6. What is released when a rip cord is pulled?
   - A. birds
   - B. water
   - C. parachute
   - D. trash

7. A G-man is a special agent in what branch of law enforcement?
   - A. FBI
   - B. U.S. Marshal Service
   - C. Police Force
   - D. Drug Enforcement

8. When and where was florin first made?
   - A. Florida, 1252
   - B. Florence, 1252
   - C. Fiji, 1522
   - D. Franklin, 1255

9. What is the capital of Slovenia?
   - A. Malabo
   - B. Luanda
   - C. Ljubljana
   - D. Hobart

10. What was the nationality of the mathematician that the Fibonacci number was named after?
    - A. Swedish
    - B. Canadian
    - C. Italian
    - D. Lebanese

11. According to ancient legend, what month is the halcyon believed to nest at sea?
    A. May
    B. March
    C. October
    D. December

12. Who might be called if you are unable to do your work in an emergency?
    A. a racerunner
    B. a pinch hitter
    C. a layette
    D. a deponent

13. Around what year did the painting style impressionism begin?
    A. 1870
    B. 1907
    C. 1820
    D. 1970

14. In situ is Latin for?
    A. inside
    B. in position
    C. in the dark
    D. insight

15. How many pounds are in a short ton?
    A. 200 lbs.
    B. 113 lbs.
    C. 2000 lbs.
    D. 2240 lbs.

16. Tetraethyl lead is added to gasoline to prevent engines from doing what?
    A. exploding
    B. freezing over
    C. overflowing
    D. knocking

17. Who granted Prince Rupert's Land to Hudson's Bay Company in 1670?
    A. King Edward
    B. King Charles II
    C. Joh Rockefeller
    D. William Penn

18. How many petals are on the flowers of wood sorrels?
    A. 5
    B. 4
    C. 3
    D. 6

19. Where is a thymus gland usually found in the body?
    A. head
    B. elbow
    C. chest
    D. foot

20. Someone described as a space cadet can also be described as being?
    A. forgetful
    B. shy
    C. angry
    D. sad

21. What plant family does an Indigo plant belong to?
    A. water lily
    B. primrose
    C. poppy
    D. legume

22. Which of the following planets is an inferior planet?
    A. Pluto
    B. Venus
    C. Saturn
    D. Earth

23. San Jose Scale insects are very destructive to what type of trees?
    A. maple trees
    B. birch trees
    C. fruit trees
    D. tulip trees

24. What were the name of the three wise men from the East who paid respect to the infant Jesus?
    A. diatoms
    B. Polyphemus
    C. scout masters
    D. Magi

25. Until what century did the Vikings invaded the coasts of Europe?
    A. 9th
    B. 10th
    C. 8th
    D. 7th

26. What was a quarter staff used for?
    A. fishing
    B. painting
    C. a weapon
    D. climbing

27. What is the name of the northern group of stars between Taurus and Cassiopeia
    A. Dionysus
    B. Zeus
    C. Perseus
    D. Milky Way

28. Who was the first man in space?
    A. Alekseyevich Gagarin
    B. Neil Armstrong
    C. Alan Shepard
    D. Sally Kristen Ride

29. A person with dyslexia may have problems with all of the following **EXCEPT**?
    A. spelling
    B. speaking
    C. reading
    D. writing

30. What year was parts of the West Bank transferred to Palestinian administration?
    A. 1933
    B. 1967
    C. 1907
    D. 1993

31. What group of citizens were protected by a tribune from unjust action?
    A. plebeian
    B. wind
    C. light
    D. women

32. What was William Tell commanded to shoot off his son's head?
    A. a ceramic plate
    B. a small porcelain doll
    C. a bottle
    D. an apple

Match each of the following words to its correct meaning:

_____ 33. cygnet   A. a crooked lawyer or politician

_____ 34. bide   B. to roll or press into a thin plate

_____ 35. toque   C. a young swan

_____ 36. Magen David   D. to lean or cause to lean backwards

_____ 37. recline   E. a cause of dispute or complaint

_____ 38. shyster   F. a woman's small hat usually without a brim

_____ 39. laminate   G. a hexagram used as a symbol of Judaism

_____ 40. quarrel   H. to wait or wait for

University Interscholastic League
2018-19 Dictionary Skills Contest
Spring Test — Grades 7 & 8

Answer Key

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

Editorial Writing

Evaluation Sheet

contestant #

In order to make this a complete learning experience, judges are asked to complete the evaluation sheet for students.

	FAIR	GOOD	EXCELLENT
The situation or problem is explained in the first two or three paragraphs.	❏	❏	❏
The writer takes an obvious stance in the first few paragraphs.	❏	❏	❏
The writer supports the stance through specific examples.	❏	❏	❏
The writer presents a logical solution or conclusion.	❏	❏	❏

What were the strong points of the editorial?

What were the weak points of the editorial?

What suggestions do you have for improvement?

Judge's Signature _____

UIL
Writing Events
JUDGE'S BALLOT

___CREATIVE WRITING   ___READY WRITING   ___EDITORIAL WRITING

INSTRUCTIONS

Each judge should use a copy of this form to rank each contestant's entry. Refer to the *Constitution and Contest Rules* or Evaluation Sheet for the criteria used to evaluate each contest.

SITE _____   **DATE** _____

GRADE   2   3   4   5   6   7   8

CONTESTANT NUMBER/CODE	TITLE OF COMPOSITION	JUDGE RANK	PLACE WINNER*
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

* **PLACE WINNER** indicates the final ranking (first through sixth place) of the contestants if several judges evaluate the papers.

Judge's signature_____

JUDGING INSTRUCTIONS

In each contestant's editorial, please look for clarity of thought, and if the writer came to a clear conclusion. Remember that many of these writers have not been trained in proper editorial writing. Therefore key considerations should be that they have made a statement of the situation and formed a stance. They should back that stance with examples. Those examples do not have to come from the data sheet. The contestant then should come to a specific solution or recommendation.

Remember that for purposes of the contest these students go to Leaguetown Middle School. Contestants should not have to specify Leaguetown Middle School, because everyone reading the school paper knows where they go to school. Also, when they refer to the school board they do not have to say "Leaguetown School Board." Again, they know in what city they live.

Judging criteria has been developed to help you score the papers. The criteria are intended to help you evaluate the writing, not as a control over your background in editorial writing or the writing process.

SAMPLE EDITORIAL

With students showing a lack of focus in their afternoon classes, principal Melissa Vaske proposed adding recess time to the end of lunch. The goal would be to help students let out their energy and refocus. The proposal includes a 20 minute recess for sixth graders and a 15 minute recess for seventh and eighth graders. The recess time would come from taking two to three minutes off of each class period. The school board will vote on the proposal at Thursday's meeting.

The board should deny the proposal for recess time.

Students are not in elementary school anymore. Middle school is supposed to be a stepping stone into high school. Recess time does not adequately prepare them for a busy high school day where they are supposed to balance homework, organizations, and jobs.

Teachers need to find a better way to get students to focus. Those who act out and get the class off-topic in afternoon classes should be reprimanded, not rewarded with play time. The idea that adding recess time will keep students from losing focus in class would be just like adding nap time to stop students from falling asleep in class–it's still going to happen.

Supporters of the proposal argue that the recess time will allow students to be more productive in their afternoon classes because with the current school day, instructional time is lost refocusing the class. This sends the wrong message that bad behavior is rewarded. Approving this proposal would encourage some students to act up again in hopes of getting more recess or other time away from class.

Students need to be taught personal responsibility. The recess time proposed by Principal Vaske is not going to do that. The board should give a strong no to the proposal on Thursday.

You are a reporter for the Leaguetown Press, the student newspaper of Leaguetown Middle School. From the given information, write an editorial as you would for the middle school newspaper. Remember that as an editorial writer you should support or oppose policy or action; you should not sermonize.

You have 45 minutes.

Do not write your name or the name of your school on this sheet or entry. Put your number in the upper right corner of each page of your entry.

STATEMENT OF SITUATION

Leaguetown Middle School is located in West Texas and has an enrollment of 700 students in grades 6, 7, and 8. Last month, principal Melissa Vaske proposed adding recess time within the school day after noticing so many students unable to focus in classes.

If the school board approves this proposal, students in 6th grade will have 20 minutes added on to their lunch time and students in 7th and 8th grade will have 15 minutes. The time for recess would come from shortening each class period by 2-3 minutes.

"Recess gives us an opportunity to provide students with a much-needed break in the middle of the day," Vaske said. "From what I've seen, it's harder for students to focus in their afternoon classes when they have been in a classroom since 8 a.m. This will give them a chance to blow off some steam and get outdoors."

While the Parent-Teacher Association and many parents support the proposal, others are concerned about it taking away instructional time.

"How is this supposed to prepare them for high school?" parent Paul Contreras said. "These kids need to learn how to focus and behave in class without play time. Those skills are important going forward in school."

Teachers support the proposal.

"I spend more time in my afternoon classes trying to get the class on track than I do teaching," science teacher Janice Stephens said. "I have only 50 minutes with my students a day, and I need to make the most of those. If giving them recess time gets them more focused in my class, then I think it's a good idea."

The proposed recess time would take place right after lunch, and students would have the choice to spend the time in the gym or outside in the courtyard area.

"I think recess would definitely be a nice break in the day, but we aren't kids anymore," eighth grader Rylee Mulligan said. "If it passes, most students will just play on their phones. I don't think it will help with behavior problems."

The school board will vote on whether or not to approve the recess time proposal at its regular meeting Thursday, Sept. 27. You are writing for the issue of the Press to be distributed on Tuesday, Sept. 25.

STANCES

Supporting the proposal

Adding recess time would allow students to let off some steam and refocus for classes later in the day. Right now, teachers are losing more than 2-3 minutes of instructional time just disciplining students. Middle school can be a stressful time, and students should be able to take a little time to relax and have fun.

Opposing

First, this isn't really recess. There is no playground. Second, there is no recess in high school. Students need to learn how to focus now. They shouldn't be rewareded because they can't behave appropriately in class.

UIL Editorial Writing Contest • A+ Fall/Winter District • 2018-2019
(Distribute this sheet to judges prior to judging.)

JUDGING INSTRUCTIONS

In each contestant's editorial, please look for clarity of thought, and if the writer came to a clear conclusion. Remember that many of these writers have not been trained in proper editorial writing. Therefore key considerations should be that they have made a statement of the situation and formed a stance. They should back that stance with examples. Those examples do not have to come from the data sheet. The contestant then should come to a specific solution or recommendation.

Remember that for purposes of the contest these students go to Leaguetown Middle School. Contestants should not have to specify Leaguetown Middle School, because everyone reading the school paper knows where they go to school. Also, when they refer to the school board they do not have to say "Leaguetown School Board." Again, they know in what city they live.

Judging criteria has been developed to help you score the papers. The criteria are intended to help you evaluate the writing, not as a control over your background in editorial writing or the writing process.

SAMPLE EDITORIAL

The school board will vote on Monday whether to reverse Principal Seth Penprase's new detention policy where those in detention wear orange t-shirts and do various chores around the school building after school. After a parent posted photos of students cleaning in orange shirts on social media, other parents began questioning the policy as well.

The board should reverse the detention policy.

It is not the responsibility of students to provide their own clean learning environment. The school has custodians who are paid to clean the school and know how to do the job safely and correctly. Students should not be exploited for free labor as a punishment.

The range of actions that can land students in detention ranges from tardiness to getting in a fight. Grouping them all together and giving them the same punishment of cleaning the school is unfair. The old policy of having a silent period is enough for most students and they make the needed correction. For those who continue to be a problem, the administration can look into additional punishments.

Those in support of the policy say that it holds students accountable for their actions, but that groups too many students into the same category. Maybe it would help some students, but for those who only violated a minor rule once, being made to wear an orange shirt and clean the school is downright embarrassing. There are juvenille detention centers for those who need that kind of correction. Public school is not the place to make students feel like inmates.

A return to the previous detention policy is the best option for students, and doing what is best for students is the school's first priority. The board should vote on Monday to reverse the new detention policy.

UIL Editorial Writing

You are a reporter for the Leaguetown Press, the student newspaper of Leaguetown Middle School. From the given information, write an editorial as you would for the middle school newspaper. Remember that as an editorial writer you should support or oppose policy or action; you should not sermonize.

You have 45 minutes.

Do not write your name or the name of your school on this sheet or entry. Put your number in the upper right corner of each page of your entry.

STATEMENT OF SITUATION

Leaguetown Middle School is located in North Texas and has an enrollment of 800 students in grades 6, 7, and 8. According to a new detention policy which started earlier this month, students serving detention must wear orange T-shirts and clean the school.

After a post was shared on social media of students in the T-shirts cleaning the school, a group of parents demanded that school officials do away with the new detention policy. The school board agreed to discuss the policy at its next meeting.

Parent Millie Lopez shared the post after she saw students cleaning windows while she was waiting in the carpool line.

"I couldn't believe what I saw," she said. "What kind of message does this send to kids who just got in trouble for talking during class? If my child is acting up, I would rather their teacher come to me than make her scrub windows."

Some parents were upset with the color of the T-shirts, as they are the same color as prison uniforms.

"These students looked like prison inmates cleaning the school," parent Michelle Owusu said. "Students should never be treated as inmates as a form of punishment."

Principal Seth Penprase said he started the policy and saw it as a way for students to be held accountable for their actions.

"Every action has a reaction and it's better that they learn it now," he said. "I don't want to students to like the consequences. If they did, this wouldn't work. Right now, two good things have resulted from this policy. Our school is cleaner, and we have less disruptions in class. Once students turn 18, they will have to do community service if they get in trouble. This is no different from that."

If the new policy is reversed, students will go back to serving detention in a monitored classroom after school for 45 minutes where they must sit in silence.

"I had detention last week because I was late to class," sixth grader Mitchell Thomas said. "I didn't really mind cleaning the school, but it was just embarrassing wearing that massive orange shirt. Everyone walked by me after school and saw. I just don't think it's fair to have to dress like that when I was only late to my first period class by three minutes."

The school board will discuss the detention policy at its regular meeting Monday, Sept. 24. You are writing for the issue of the Press to be distributed on this Friday, Sept. 21.

STANCES
Supporting the detention policy

This policy holds students responsible for their actions. With the old policy, they were just sitting silently in a room for 45 minutes and not being productive. Now, the school is getting cleaned, and the students are less likely to act up in class.

Opposing

This new policy is unfair and embarrassing to students and treats them like inmates. The school has custodians to clean the school. There was nothing wrong with the old detention policy. If parents think their children need to be disciplined further, they can make them clean at home.

JUDGING INSTRUCTIONS

In each contestant's editorial, please look for clarity of thought, and if the writer came to a clear conclusion. Remember that many of these writers have not been trained in proper editorial writing. Therefore key considerations should be that they have made a statement of the situation and formed a stance. They should back that stance with examples. Those examples do not have to come from the data sheet. The contestant then should come to a specific solution or recommendation.

Remember that for purposes of the contest these students go to Leaguetown Middle School. Contestants should not have to specify Leaguetown Middle School, because everyone reading the school paper knows where they go to school. Also, when they refer to the school board they do not have to say "Leaguetown School Board." Again, they know in what city they live.

Judging criteria has been developed to help you score the papers. The criteria are intended to help you evaluate the writing, not as a control over your background in editorial writing or the writing process.

SAMPLE EDITORIAL

After watching the movie "Eighth Grade" with her own middle school-aged niece and nephew, Principal Lauren Young has proposed a screening of the movie for all eighth graders next Friday, April 12. Because of the "R" rating of the movie, some parents are against the screening. They believe it contains content that is innappropriate for middle-schoolers to see. The school board will vote on the proposal at their meeting Tuesday.

The board should pass the proposal for the movie screening.

The topics of anxiety, depression, and even the bad language and sexual innuendos addressed in "Eighth Grade" are nothing new to middle schoolers. Students are the ones going to school every day and dealing with those very real problems. Sheltering them from watching the movie doesn't stop those things from happening in real life.

Young planned for students to have a discussion in small groups with a teacher after the screening. This can be really helpful for someone who feels like they have no one else to turn to with their problems and creates a safer, more open school environment.

Opponents of the proposal argue that middle schoolers aren't mature enough to handle the content shown in the movie seriously enough. Parents aren't the ones overhearing gossip in the locker room and the cafeteria. Parents aren't the ones struggling with the transition to high school. Students are. A potential solution could be allowing parents to sign a permission slip to either allow their student to participate in the screening or not.

The discomfort of some parents shouldn't determine what happens to all the eighth grade students. The movie screening proposed by Principal Young promotes a better school environment. The board should give a strong yes to the proposal on Tuesday.

Editorial Writing

You are a reporter for the Leaguetown Press, the student newspaper of Leaguetown Middle School. From the given information, write an editorial as you would for the middle school newspaper. Remember that as an editorial writer you should support or oppose policy or action; you should not sermonize.

You have 45 minutes.

Do not write your name or the name of your school on this sheet or entry. Put your number in the upper right corner of each page of your entry.

STATEMENT OF SITUATION

Leaguetown Middle School is located in Central Texas and has an enrollment of 1,100 students in grades 6, 7, and 8. After seeing the movie "Eighth Grade," principal Lauren Young proposed having a screening of the movie for eighth grade students next Friday, April 12. The school board has to approve all movies shown in schools with a rating of "PG-13" or "R."

Parents have expressed concern because the movie has an "R" rating and contains topics that they consider inappropriate for middle schoolers. The specifications for the "R" rating on "Eighth Grade" indicate it is for language and mild sexual content.

According to one movie review, the movie is "a realistic, relatable indie dramedy about going through adolescence. Elsie Fisher stars as socially awkward eighth grader Kayla, a social media-savvy teen who's enduring the awkward transition between middle and high school." Common Sense Media rates the film appropriate for ages 14 and up.

"I can't believe that this movie could be shown at any school — especially a middle school," parent Lisa Brooks said. "I saw the movie myself, and I would not want my daughter watching it. If the school board approves this proposal, I will be keeping her home from school that day."

Young saw the movie with her niece and nephew, who are both in eighth grade. They told Young they loved the movie and every middle school student should see it.

"The movie opened my eyes to what it's like to be a middle school student in this day and age," Young said. "I want the eighth graders to be able to see it, so maybe they can understand that they aren't the only ones feeling anxious about school and life."

Young said teachers will lead discussions in small groups after the movie.

"I understand why she wants to show students the movie, but I don't think all of the students are mature enough to take it seriously," English teacher Carol Summers said. "Teachers are going to be the ones to struggle and refocus the students after the screening."

"My mom took me to see the movie when it first came out," eighth grader Devin Field said. "It's the first movie about school that I've seen that I can actually relate to. There is some inappropriate stuff in there, but I've heard much worse things in the locker room. Honestly, I don't know why it's rated R. It should be PG-13."

The school board will discuss and vote on whether or not to approve the movie screening at its regular meeting this upcoming Tuesday, March 26. You are writing for the issue of the Press to be distributed on this Monday, March 25.

STANCES
Supporting the movie screening

The message in the movie is something that eighth graders need to hear. The movie is realistic because eighth graders deal with these issues every day. Taking time out of the school day to give students a space to talk with peers and adults about these issues can only help students and the culture of the school.

Opposing

There is an "R" rating on the movie for a reason. Most middle schoolers aren't mature enough to take the topics discussed in the movie seriously. Parents should be the ones to show their children the movie if they think it is appropriate.

Impromptu Speaking

EVALUATION SHEET

INSTRUCTIONS

Contestants should be evaluated and ranked based on effectiveness of delivery, organization of ideas and the overall impression of the speech. Students draw three topics and have three minutes to prepare a speech. The maximum time limit for speaking is five minutes. There is no minimum time limit. Topics may be serious or humorous in nature. Note cards may not be used during the presentation. 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. Judging decisions are an individual responsibility.

Speaker Number _____   **Speaker Name** _____

Section _____   **Topic** _____

CRITERIA

Evaluate the contestant in each category. Do NOT total these numbers to determine rank in the round. They are only designed to give the contestant an indication of strengths and weaknesses.

QUESTION	NEEDS WORK		GOOD	SUPERIOR	
1. Was the presentation organized clearly and effectively?	1	2	3	4	5
2. Was the speaker's delivery smooth and articulate?	1	2	3	4	5
3. Did the student have adequate eye contact?	1	2	3	4	5
4. Did the student have a creative approach to the topic?	1	2	3	4	5
5. Was the speaker poised and confident?	1	2	3	4	5
6. Did the speaker have vocal variety?	1	2	3	4	5
7. Was the speaker interested and enthusiastic?	1	2	3	4	5
8. Did the speaker communicate with the audience?	1	2	3	4	5

WRITTEN EVALUATION

Comments should be constructive and supportive.

Judge's signature _____

UIL

JUDGE'S MASTER BALLOT

CIRCLE EVENT: Impromptu Speaking   Modern Oratory   Oral Reading   Storytelling

INSTRUCTIONS

Each judge should use a copy of this form to rank each of the presentations in the contest. Please do not confer with other judges before ranking students. Judging decisions are an individual responsibility. Refer to the *Constitution and Contest Rules* or Evaluation Sheet for the criteria used to evaluate the presentations.

DISTRICT _____

SECTION _____

GRADE LEVEL _____

ROUND   ❏ Prelims   ❏ Finals

SPEAKER NUMBER	NAME	TITLE	JUDGE RANK
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____

Judge's signature _____

Contest Director's Ranking Sheet
for a panel of judges in speaking events

EVENT _____

SECTION   I   II   III   IV   FINALS

BEFORE RANKING, CHECK THE FOLLOWING

❐ Evaluation sheets have ranks   ❐ Speaker order   ❐ Length of presentation

CRITERIA FOR DETERMINING PLACES AND BREAKING TIES

Follow this order to place all contestants.

1. Majority (Watch for the "or better" language in determining a majority.)
2. Lowest sum
3. Judges' preference
4. Decimal equivalents

NOTES

1. See Section 1003 of the *Constitution and Contest Rules* or the *A+ Handbook* for a full discussion of this procedure.
2. Ties must be broken before other contestants are placed.
3. Be careful! The lowest total does not automatically win. Follow prescribed order of criteria for each ranking.
4. A computer program is available for multiple judge tabulation. See the UIL Web site.

Speaker Number	Judge 1	Judge 2	Judge 3	Totals	Preference*	Decimal Value*	Rank
1							
2							
3							
4							
5							
6							
7							
8							

*   Judges' preference and decimal values are used only to break ties.

1. One food I wish did not exist is…
2. If I had a garden, it would have…
3. If the temperature outside were the same year-round, it should be…
4. One time I was mistaken for…
5. A way my best friend and I are similar is…
6. Something we can all do to save money is…
7. If I were in charge of decorating my house, it would look like…
8. An animal I want as a pet is…
9. My favorite method of transportation is…
10. The most famous person I have ever met…
11. The best Halloween costume I've ever worn…
12. A sport many people like that I don't…
13. My least favorite chore is…
14. If I were able to play any musical instrument, it would be…
15. My favorite thing to do with my friends is…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Invitational
PRELIMINARY ROUND

<u>CUT APART FOR TOPIC SELECTION</u>

1. One food I wish did not exist is…

2. If I had a garden, it would have…

3. If the temperature outside were the same year-round, it should be…

4. One time I was mistaken for…

5. A way my best friend and I are similar is…

6. Something we can all do to save money is…

7. If I were in charge of decorating my house, it would look like…

8. An animal I want as a pet is…

9. My favorite method of transportation is…

10. The most famous person I have ever met…

11. The best Halloween costume I've ever worn…

12. A sport many people like that I don't…

13. My least favorite chore is…

14. If I were able to play any musical instrument, it would be…

15. My favorite thing to do with my friends is…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Invitational
FINAL ROUND

1. If I wrote a book, it would be about…
2. My favorite tradition is…
3. If I could invent a planet, the landscape would be…
4. The best season is…
5. My favorite kind of art is…
6. If the day had more than 24 hours…
7. Three ways to protect the environment are…
8. If I could spend a million dollars on other people, I would…
9. First impressions are sometimes misleading because…
10. Four ways to practice everyday kindness are…
11. If I were to invent a language, it would sound like…
12. When I realized what I was looking at was not human…
13. If I were in charge of one part of the government, I would pick…
14. I hope there is a scientific breakthrough soon on…
15. One time, my best friend and I went on an adventure when…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Invitational
FINAL ROUND

CUT APART FOR TOPIC SELECTION

1. If I wrote a book, it would be about…

2. My favorite tradition is…

3. If I could invent a planet, the landscape would be…

4. The best season is…

5. My favorite kind of art is…

6. If the day had more than 24 hours…

7. Three ways to protect the environment are…

8. If I could spend a million dollars on other people, I would…

9. First impressions are sometimes misleading because…

10. Four ways to practice everyday kindness are…

11. If I were to invent a language, it would sound like…

12. When I realized what I was looking at was not human…

13. If I were in charge of one part of the government, I would pick…

14. I hope there is a scientific breakthrough soon on…

15. One time, my best friend and I went on an adventure when…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Fall/Winter District
PRELIMINARY ROUND

1. Without science, we wouldn't have…
2. My siblings and I argue about…
3. A good leader that I remember is…
4. My creative outlet is…
5. A memory I wish I captured in a photograph…
6. The best birthday party I've ever had…
7. My first act as president would be…
8. Teamwork is important when…
9. The most difficult subject in school is…
10. Honesty is good because…
11. If I wrote articles for a newspaper, I would write about…
12. My favorite type of movie is…
13. My favorite sport is…
14. If I could only talk about one thing for a whole day, I would talk about…
15. A time I had to wait a long time for something is…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Fall/Winter District
PRELIMINARY ROUND

<u>CUT APART FOR TOPIC SELECTION</u>

1. Without science, we wouldn't have…

2. My siblings and I argue about…

3. A good leader that I remember is…

4. My creative outlet is…

5. A memory I wish I captured in a photograph…

6. The best birthday party I've ever had…

7. My first act as president would be…

8. Teamwork is important when…

9. The most difficult subject in school is…

10. Honesty is good because…

11. If I wrote articles for a newspaper, I would write about…

12. My favorite type of movie is…

13. My favorite sport is…

14. If I could only talk about one thing for a whole day, I would talk about…

15. A time I had to wait a long time for something is…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Fall/Winter District
FINAL ROUND

1. If I were an inanimate object, I would be…
2. A language I would like to speak is…
3. We should all know how to read because…
4. Sunlight feels like…
5. A peaceful world would look like…
6. If my house was haunted by a friendly ghost…
7. A time when I had to work on a team to achieve a goal is…
8. The most important person in my life is…
9. If my pets could talk, I think they would say…
10. If I lived in a different time in history, I would pick…
11. The hardest part about learning and speaking English is…
12. An issue they don't talk about on the news but should is…
13. People are often misled about…
14. As I crept around the corner…
15. Standardized testing…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Fall/Winter District
FINAL ROUND

<u>CUT APART FOR TOPIC SELECTION</u>

1. If I were an inanimate object, I would be…

2. A language I would like to speak is…

3. We should all know how to read because…

4. Sunlight feels like…

5. A peaceful world would look like…

6. If my house was haunted by a friendly ghost…

7. A time when I had to work on a team to achieve a goal is…

8. The most important person in my life is…

9. If my pets could talk, I think they would say…

10. If I lived in a different time in history, I would pick…

11. The hardest part about learning and speaking English is…

12. An issue they don't talk about on the news but should is…

13. People are often misled about…

14. As I crept around the corner…

15. Standardized testing…

1. A skill that not many people have nowadays that is useful is…
2. I would like to invent a robot that…
3. A place I would like to volunteer at is…
4. My dream car is…
5. Something we should not have to pay for…
6. Justice is…
7. A celebrity who I think I would be good friends with is…
8. I wish we had more _____ weather in Texas…
9. As a kid, I wish I had the power to…
10. If calculators did not exist…
11. Sports teach us…
12. A time when I recovered from failure was…
13. The most amazing thing about science is…
14. The funniest thing that's ever happened to me at school is…
15. Clouds…

CUT APART FOR TOPIC SELECTION

1. A skill that not many people have nowadays that is useful is…

2. I would like to invent a robot that…

3. A place I would like to volunteer at is…

4. My dream car is…

5. Something we should not have to pay for…

6. Justice is…

7. A celebrity who I think I would be good friends with is…

8. I wish we had more _____ weather in Texas…

9. As a kid, I wish I had the power to…

10. If calculators did not exist…

11. Sports teach us…

12. A time when I recovered from failure was…

13. The most amazing thing about science is…

14. The funniest thing that's ever happened to me at school is…

15. Clouds…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Spring District
FINAL ROUND

1. Something I am thankful for…
2. Innovation means…
3. I spotted the jewelry thief running through the crowd, so I…
4. It's important to talk calmly even when you disagree because…
5. An event in history that changed the course of the world is…
6. Beauty is in the eye of the beholder because…
7. If I was the teacher of my class…
8. Something that teaches us responsibility…
9. If I replaced the star of a movie, the movie and role would be…
10. If I had a sixth sense, it would be…
11. What it means to be a Texan…
12. A superpower that would be both good and bad to have is…
13. By the time I am thirty years old, I want to…
14. I think that one day, computers will be able to…
15. A time when I was proud of myself…

A+ IMPROMPTU SPEAKING TOPICS
2018-2019 Spring District
FINAL ROUND

CUT APART FOR TOPIC SELECTION

1. Something I am thankful for…

2. Innovation means…

3. I spotted the jewelry thief running through the crowd, so I…

4. It's important to talk calmly even when you disagree because…

5. An event in history that changed the course of the world is…

6. Beauty is in the eye of the beholder because…

7. If I was the teacher of my class…

8. Something that teaches us responsibility…

9. If I replaced the star of a movie, the movie and role would be…

10. If I had a sixth sense, it would be…

11. What it means to be a Texan…

12. A superpower that would be both good and bad to have is…

13. By the time I am thirty years old, I want to…

14. I think that one day, computers will be able to…

15. A time when I was proud of myself…

CONTESTANT NUMBER:

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. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____

UIL LISTENING CONTEST - GRADES 7 & 8
INVITATIONAL MEET 2018-2019

Contest Script- "Natural Gas"

Natural gas is a clean source of energy that has many uses in today's world. It is used for heating and cooking in homes across the country and around the world. Most of us take the ability to use natural gas for granted. However, natural gas has only been used commercially for less than 250 years. What is natural gas, and what is its history?

Natural gas is just what its name implies. It is a naturally occurring hydrocarbon gas mixture. A hydrocarbon is a compound made up of a hydrogen and carbon. Natural gas consists primarily of methane, which is one of the most simple hydrocarbons. It is made up of one carbon atom and four hydrogen atoms. Natural gas commonly includes varying amounts of other alkanes such as propane, butane and ethane. An alkane is a type of molecular compound that contains carbon and hydrogen connected in what resembles a tree-like structure. Each carbon atom has 4 bonds and each hydrogen atom is joined to one of the carbon atoms. All of the carbon-to-carbon bonds are single. This complex structure is known as the compound's carbon skeleton or carbon backbone. Methane is an alkane, but there are many other alkanes with much more complicated structures. Natural gas also sometimes contains a small percentage of carbon dioxide, nitrogen, hydrogen sulfide, or helium.

1:00

Natural gas is a fossil fuel formed in nature. It is formed from the remains of plants and animals that lived millions of years ago. When layers of decomposing plant and animal matter experience the intense heat and pressure under the surface of the Earth over millions of years, the energy that the plants originally obtained from the sun is stored in the form of chemical bonds in the gas. Natural gas is found in large lakes, or reservoirs, beneath the surface of the earth. As the natural gas forms, it tries to float

2:00 to the surface. Large layers of rock trap the gas where it pools. Although we refer to the areas where the gas is located as a lake or pool, in reality, the gas is held in the small holes and cracks that naturally occur in rock formations.

Although the gas occurs naturally, before there was an understanding of what natural gas was, it was surrounded by myth and mystery. If a lightning strike occurred near an area in which natural gas was escaping from the earth's crust, it would create a fire, which seemed to originate from deep inside the earth. These fires were most certainly a mystery to most early civilizations and formed the root of myth and superstition. One of the most famous occurrences was found in ancient Greece on Mount Parnassus around 1000B.C. While herding goats, a man came across what he described as a "burning spring". He had seen a flame rising from a fissure in a rock. Believing it to be a gift from the gods, the Greeks built a temple around the flame. This temple housed a

3:00 priestess who was called the Oracle of Delphi. She gave out prophecies she claimed were inspired by the flame.

In about 500 B.C., the Chinese discovered that they could use the natural fires to their advantage. They began using crude bamboo pipelines to transport gas to an area in which they could control the flame and use it for boiling sea water. As the water boiled, they could separate the water from the salt and create drinkable water for themselves. Commercial use of natural gas is much more recent. Great Britain was the first nation to commercialize natural gas. In 1785, the British discovered how to produce natural gas from coal and used it to light their streets and houses. In 1816, Baltimore, Maryland also used this type of manufactured natural gas to become the first city in the United States to light its streets with gas. However, manufacturing gas was much less efficient than using gas that forms naturally underground.

4:00 In America, naturally occurring gas was discovered as early as 1626. French explorers discovered that Native Americans were lighting gases that seeped into and around Lake

Erie. It was in this area that the American natural gas industry began. In Fredonia, New York in 1821, William Hart dug the first well specifically intended to seek out and obtain natural gas. After he noticed gas bubbles rising to the surface of a creek, William Hart dug a 27-foot well to try to increase the flow of gas to the surface. He is widely regarded as the 'father of natural gas' in America. Eventually, the Fredonia Gas Light Company was formed. It was America's first natural gas company.

5:00 In 1836, the city of Philadelphia created the first city owned natural gas distribution company, the Philadelphia Gas Works. Although there are more than 900 publicly owned natural gas distribution companies in the United States today, the Philadelphia Gas Works is the largest and longest operating public gas system in existence. In 1859, a former railroad conductor, Colonel Edwin Drake, dug the first well hitting oil and natural gas at 69 feet below the surface. A two-inch diameter pipeline ran 5 ½ miles from the well to the village of Titusville, Pennsylvania proving that natural gas could be safely transported from its underground source and used for practical purposes. During the 19th century, however, few pipelines were created. Without this infrastructure, the difficulty in transporting the gas prohibited the use in homes for heating or cooking. Near the end of the 19th century, the availability of electricity led to a decline in the use of natural gas, so producers were forced to look for new uses for their supply.

6:00 In 1891, a 210-mile-long pipeline was constructed to carry natural gas from wells in Indiana to the city of Chicago. Although this pipeline was not very efficient, it led to the idea of building a pipeline infrastructure. In the 1920s, after World War II, advances in welding techniques, pipe rolling and metallurgy improved pipeline reliability and further advanced the use of natural gas. Throughout the next 40-50 years, pipelines were constructed all across America. In 1885, an inventor named Robert Bunsen developed what is now known as the Bunsen burner. This device mixed natural gas with air allowing a flame that could be safely used for cooking and heating inside the home. This invention led to many more inventions which effectively used natural gas in

America and throughout the world. A temperature-regulating thermostat which allowed the temperature of the flame to be adjusted and monitored made heating with natural gas much safer and effective. Natural gas was used to heat homes and operate appliances such as water heaters, ovens, and cooktops. Manufacturing plants, processing plants, and electric companies also used natural gas.

7:00 Obtaining natural gas is big industry in 21st Century. However, in the 19th and early 20th century, methods for obtaining usable gas were just being developed. In the 19th century, natural gas was released as companies were drilling for oil. If there was not a method for transporting the natural gas to market near the oil fields, it was simply released into the atmosphere or burned off at oil fields. Because of the advances in pipelines and gas transportation, this is no longer the case. Today, the natural gas is either injected back into the natural rock formation to be kept until a buyer can be located. In areas where natural gas is in high demand, pipelines are constructed and used to transport the gas from the wellsite to a processing plant. Upon arriving at the gas processing plant, impurities and by-products are extracted for other uses. These by-products include ethane, propane, butane, and sulphur. When the clean natural gas is almost pure methane, it is transported through pipelines and delivered to its point of

8:00 use.

There are 3 different types of pipelines used to transport the natural gas. Gathering pipelines transport the raw natural gas directly from the wellhead to the gas processing plant. Once processed, the gas is sent to consumers via transmission pipelines. Transmission pipelines are highly pressurized and allow processed natural gas to be sent in large volumes over great distances. From the transmission pipelines, the gas flows into a low-pressure distribution system. Utility companies add an odorant to the gas as a safety precaution, so the consumers can detect a leak. Distribution pipelines supply gas to homes and businesses. A regulator is used to decrease the pressure even more, and a meter measures the gas consumed by the user.

9:00 With all of the oil wells in Texas, one would think that Texas would be over flowing with natural gas. In fact, Fort Worth is built on top of a natural gas field so vast that the U.S. Geological Service estimates it contains approximately 26 trillion cubic feet of undiscovered natural gas. They also estimate that as much as 160 billion cubic feet of natural gas are in place per square mile in this formation. Called the Barnett Shale field, it is the largest gas-producing field in Texas. The Barnett Shale filed covers 15 counties in the northern part of Texas with its core area comprising about 120,000 acres stretching from Fort Worth to the western outskirts of Denton. This field was discovered in 1981 by Mitchell Energy when they drilled the first well in the area. The Barnett Shale core area produces more than 550 million cubic feet of natural gas per day out of more than 1,700 wells.

10:00 Ninety-nine percent of the natural gas used in the United States comes from North America. As more and more people become concerned about protecting the environment, the use of natural gas makes sense because it is the cleanest burning fossil fuel. It has become a vital part of the world's energy supply. Natural gas currently supplies more than half of the energy consumed by residential and commercial customers. Forty-one percent of the energy used by industry in the United States is natural gas. It is one of the cleanest, safest, and most useful of all available energy sources today.

A+ ACADEMICS

University Interscholastic League

Listening
grades 7 & 8

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

UIL LISTENING CONTEST - GRADES 7-8
INVITATIONAL 2018-2019
TEST

"Natural Gas"

1. Natural gas is composed primarily of
   - A. propane
   - B. butane
   - C. methane
   - D. ethane

2. The first city owned natural gas distribution company
   - A. Philadelphia Gas Works
   - B. Fredonia Gas Light Company
   - C. Great Britain Natural Gas
   - D. Baltimore Commercialized Gas

3. In 1891, a 210-mile-long pipeline was constructed to carry from wells in Indiana to
   - A. Philadelphia
   - B. Chicago
   - C. Baltimore
   - D. Titusville

4. What was the significance of the Bunsen burner?
   - A. It mixed natural gas and air, thus allowing the flame to be safely controlled.
   - B. It regulated the temperature of the flame, thus allowing controlled heating.
   - C. It limited the amount of natural gas released, thus promoting efficiency.
   - D. It created a hotter flame, thus making cooking with gas possible.

5. The U.S. Geological Service estimates that the undiscovered natural gas located in Barnett Shale field is approximately
   - A. 38 million cubic feet
   - B. 45 billion cubic feet
   - C. 15 million cubic feet
   - D. 26 trillion cubic feet

6. French explorers discovered that Native Americans were lighting gases that seeped into and around
   - A. Baltimore
   - B. Fredonia, New York
   - C. the Allegheny Mountains
   - D. Lake Erie

7. The Chinese discovered that they could use natural fires to their advantage in about
   - A. 500 BC
   - B. 1000 BC
   - C. 1785
   - D. 1350

8. The first city in the United States to light its streets with gas was
   A. Philadelphia
   B. Baltimore
   C. Chicago
   D. Fredonia

9. In the early 19th Century, what happened to natural gas that was found while drilling for oil?
   A. If there wasn't a market for it, the gas was injected back into the ground.
   B. If a buyer wasn't available, the gas was released into the air.
   C. Without a safe way to transport it, the gas was always burned off.
   D. It was piped into barrels and stacked in warehouses until needed.

10. What type of pipeline transports the raw natural gas directly from the wellhead to the gas processing plant?
    A. Gathering
    B. Transmission
    C. Pressurization
    D. Distribution

11. What percentage of the natural gas used in the United States comes from North America?
    A. 45%
    B. 78%
    C. 85%
    D. 99%

12. An alkane is a type of molecular compound that contains
    A. carbon dioxide and helium
    B. butane and ethane
    C. hydrogen and carbon
    D. sulfide and nitrogen

13. Colonel Edwin Drake
    A. dug a well hitting oil and natural gas at 69 feet below the surface in 1859
    B. constructed a 210-mile long pipeline to carry natural gas to Chicago
    C. discovered natural gas under what is now Fort Worth, Texas
    D. dug the first well specifically intended to seek out and obtain natural gas

14. Who is widely regarded as the father of natural gas in America?
    A. Edwin Drake
    B. Barnett Mitchell
    C. Robert Bunsen
    D. William Hartt

15. What percent of the energy used by industry in the United States today is natural gas? _____

16. All of the following advanced the use of natural gas after World War II except
    A. advanced welding techniques
    B. safer means of building pipelines underground
    C. improvements in pipe rolling and metallurgy
    D. increased pipeline reliability

17. The complex structure of an alkane is known as the compound's
    A. tree-trunk skeleton   B. hydrogen-web
    C. carbon backbone   D. hydrocarbon signature

18. William Hartt dug a 27 foot well to increase gas flow after he
    A. noticed bubbles rising to the surface of a creek
    B. encountered a burning spring on a mountain side
    C. saw the surface of a lake burning in the night
    D. captured a North American Indian who led him to the sacred flame

True/False

19. In natural gas, each carbon atom has 4 bonds and each hydrogen atom is joined to one of the carbon atoms.

20. Natural gas is a clean source of energy that has been used commercially for approximately 500 years.

21. As natural gas forms, it tries to float to the surface and is trapped beneath the waters of large underground lakes and pools of oil.

22. The Oracle of Delphi lived in a Greek temple build around a flame found in ancient Greece on Mount Olympus around 1000 B.C. by a goat herdsman who saw a flame rising from a rock.

23. Manufacturing natural gas from coal is much less efficient than using gas that forms naturally underground.

24. Near the end of the 19th century, the availability of electricity led to a decline in the use of natural gas, forcing producers to look for new uses for their supply.

25. The Barnett Shale core area produces more than 550 million cubic feet of natural gas per day out of more than 1,700 wells.

UIL LISTENING CONTEST - GRADES 7-8
INVITATIONAL 2018-2019
ANSWER KEY

"Natural Gas"

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

14. D
15. 41 (forty-one)
16. B
17. C
18. A
19. True
20. False
21. False
22. False
23. True
24. True
25. True

Contest Script- "The Green Bank Telescope"

Nestled deep in Pocahontas County, inside the Allegheny Mountain Range, lies a quiet little town called Green Bank. The community was named for a green riverbank located nearby. Green Bank is found along West Virginia Highway 28 near the Snowshoe Mountain Ski Resort. At the last national census in 2010, its population was 143. Sounds like a quiet, sleepy place. So why is it important? Green Bank, West Virginia, is home to the Green Bank Telescope.

The Greenbank Telescope is the world's largest fully steerable radio telescope. This telescope was operated by the National Radio Astronomy Observatory (NRAO) until September 30, 2016. Since October 1, 2016, the Telescope has been operated by the Green Bank Observatory. Because of the telescope, Green Bank has been designated as part of the National Radio Quiet Zone, which means that any radio transmissions are

1:00 heavily restricted by law. This includes the use of cell phones, wireless networks (think Internet access) and satellite television. This law is enforced by a radio policeman who uses specialized equipment to detect signals from unauthorized electronics. Imagine not being able to use a microwave oven to heat up your leftovers! Scientists were baffled when an unidentified source skewed their data. They were amused to find out that the interference was coming from battery operated fans being sold in the gift shop.

In the National Radio Quiet Zone, or NRQZ, radio transmissions are only used to facilitate scientific research and promote military intelligence. The National Radio Quiet Zone was established by Congress in 1958. The Quiet Zone is an approximate rectangle of land measuring 107 miles on the north edge, 109.6 miles on the south edge and 120.9 miles on each of the east and west edges. It comprises approximately 13,000 square miles.

2:00 Because Green Bank is located within the Quiet Zone, many people who suffer from

electromagnetic hypersensitivity have moved there to make a new, more peaceful home for themselves. Although scientists find no evidence to support a scientific diagnosis for electromagnetic hypersensitivity, those who believe they suffer from it report symptoms of headache, fatigue, stress, sleep disturbances, skin prickling, burning sensations, rashes, pain and muscle aches. Escape from cellular radiation is the main attraction to Green Bank for these people. As of 2013, an estimated 36 people had moved to Green Bank to escape the effects of electromagnetic hypersensitivity.

3:00 The National Radio Quiet Zone straddles the border between Virginia and West Virginia and also includes a small part of Maryland. It is centered between the Green Bank Observatory in Green Bank and the Sugar Grove Observatory in Sugar Grove, West Virginia. The Sugar Grove Station is a National Security Agency (NSA) communications site, which according to a 2005 article in the New York Times, intercepted all international communications entering the Eastern United States. The site was first developed by the Naval Research Laboratory in the early 1960s as the site of a 600-foot radio telescope that would gather information on Soviet radar and radio signals reflected from the moon. It would also gather data on outer space.

This project was halted in 1962, and the site was turned into a radio receiving station. It was activated as Naval Radio Station Sugar Grove on May 10, 1969. In April 2013, however, the Sugar Grove Station was ordered to be closed no later than September 30, 2015. On July 26, 2016, the Sugar Grove Station was auctioned off with a winning bid of $11.2 million. This transaction fell through, and in 2017, a second auction resulted in a $4 million purchase by an investment group based out of Alabama. It is being repurposed as a privately-owned healthcare facility for active-duty military, veterans and **4:00** their families. The listening station in Green Bank, however, continues to operate.

Why is the Green Bank Site so important? The telescope's location has been the site of important radio astronomy telescopes since 1957. It was dedicated on October 17, 1957. The National Radio Astronomy Observatory was founded in 1956 and the Observatory's

first telescope, the Tatle 85 Foot (which was 85 feet in diameter), was completed in 1959. The 300 Foot telescope was completed in 1962 followed by a 140 Foot telescope. By locating the telescope within the Radio Quiet Zone, scientists are able to detect even very faint radio-frequency signals which man-made signals might otherwise mask. Its location also has the natural borders of National Forest land and the Allegheny Mountains to shield it from some radio interference.

5:00 At present, there are seven additional telescopes. For many years scientists and alien hunters have discussed the idea of using telescopes to search for extra-terrestrial life. It was at the Green Bank Site in 1961 that Frank Drake presented the Drake Equation which he had developed to estimate the total number of detectable extraterrestrial civilizations found in the Milky Way galaxy. Using the Tatle 85 telescope, he tried to find evidence that other life-forms were sending out radio transmissions. He did not discover any. These days, the telescope sits as a memorial to the beginnings of the world's first scientific study using radio telescopes to determine the origins of life on other and other planets. Drake called his project Ozma.

The newest addition to the radio telescopes in Green Bank is Robert C. Byrd Green Bank Telescope, or the GBT as it is more commonly called. The GBT is the world's largest fully steerable radio telescope. This telescope honors the late Senator Robert C. Byrd who represented West Virginia and pushed funding for the telescope through Congress. The cost of building the telescope was more than $95 million. Groundbreaking for the GBT was in 1991. The GBT began operations in 2001. It was constructed after a previous

6:00 telescope collapsed on November 1988 due to the sudden loss of a gusset plate in the box girder assembly. Without it, the structural integrity of the telescope was compromised. The GBT operates at meter to millimeter wavelengths. Its collecting area is 100 meters in diameter. That's 2.3 acres! It weighs almost 17 million pounds and stands 485 feet above ground level. That's 60% taller than the Statue of Liberty! It operates 7 days a week, 24 hours a day, 362 days a year. The panels, which make up the telescope, are made of aluminum. The panels have actuators, which keep the

telescope from sagging under its own weight as the panels are moved. It is fully steerable and 85% of the entire celestial sphere can be accessed. It is used for astronomy about 6500 hours each year, which is more than most observatories. Because of its flexibility and ease of use, it can rapidly respond to new scientific ideas. Scientists can reconfigure it with new and experimental hardware with relative ease as well. The facilities of the

7:00 Green Bank Observatory are also used for research for many programs in education including training students and teachers with approximately 40,000 scientists and visitors annually. Locals jokingly call the GBT the Great Big Thing.

The giant 2.3-acre receiving dish of the GBT can be thought of as an enormous bucket, which scoops up the weak radio waves that fall on us from objects in space. It is extremely sensitive to the hydrogen clouds that exist between stars and galaxies. Because hydrogen is the building block of the universe, when scientists are able to study where these clouds exist, what is happening inside those clouds, and where the clouds are headed, they are able to draw conclusions about the history and future of galaxies they are studying. They also study comets to learn about their temperatures and chemical make-up.   When partnered with a transmitting radar antenna, the GBT can be used to map asteroids, moons, planets and comets with amazing accuracy.

8:00 Research using the telescope has led to several discoveries. In 2002, scientists discovered 3 new millisecond pulsars in the globular cluster Messier 62. This cluster is located 22,500 light years from Earth and is 100 light years across. In 2006, several other discoveries were announced. A large, coil-shaped magnetic field was located in the Orion molecular cloud. In addition, a large hydrogen gas super-bubble was located 23,000 light years away. In September of 2014, scientists used the GBT to discover that our Milky Way Galaxy is located in a super cluster of galaxies that is 500 million light years across and has a mass of more than 100 million billion suns! Scientists have also located a massive neutron star which they have determined to the largest to date, a cloud of primordial gas surrounding several galaxies and even complex molecules, such as sugar, in space.

9:00 In August 2012, the National Science Foundation recommended to Congress that the GBT be defunded over a period of 5 years. In the 2014 fiscal year budget, Congress did not grant funding for the project. At this point, the GBT committee began looking for funding. In October of 2016, operation of the Observatory changed from the National Science Foundation to the Green Bank Observatory, which allowed for private funding to be secured. West Virginia University donated $1 million during a 2-year period in exchange for giving students and professors access for research.

10:00 Another source that heavily funded the GBT is a group called Breakthrough Listen. Breakthrough Listen is a science-based program that searches for intelligent extraterrestrial communications throughout the universe. The project began in January 2016 and will most likely continue for 10 years. It had $100 million in funding and thousands of hours of dedicated telescope time. It is the largest, most comprehensive search for alien communications ever launched. Breakthrough Listen is based at Berkeley SETI Research Center in the Astronomy Department of the University of California, Berkeley. This project uses information gleaned from the Green Bank Observatory, the Parkes Observatory, and the Automated Planet Finder. The project generates data from over one million nearby stars and the centers of 100 galaxies within range. All of their data is available to the public and can be accessed for study.

Perhaps one day they will discover alien civilizations or yet undiscovered stars and galaxies. Who knows? What is sure is that as long as funding allows, the GBT is an engineering marvel that will continue to provide a listening station for scientists and a quiet place for those wishing to live in a world free from radio transmissions.

A+ ACADEMICS

University Interscholastic League

Listening
grades 7 & 8

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

"The Green Bank Telescope"

1. Green Bank is located in
   A. Maryland   B. West Virginia
   C. Virginia   D. Pennsylvania

2. Green Bank has been the site of important radio astronomy telescopes since
   A. 1957   B. 1969
   C. 1962   D. 1974

3. The National Quiet Zone comprises approximately
   A. 10,000 square miles   B. 11,000 square miles
   C. 12,000 square miles   D. 13,000 square miles

4. Because Green Bank is located within the Quiet Zone, many people have moved there who suffer from_____hypersensitivity
   A. radio transmission   B. geothermic
   C. magnetic radio-wave   D. electromagnetic

5. Who operated the Green Bank Telescope until September 30, 2016?
   A. Green Bank Telescope Committee
   B. National Radio Astronomy Observatory
   C. National Security Agency
   D. Breakthrough Listen

6. Scientists discovered 3 new millisecond pulsars in the globular cluster Messier 62 in
   A. 2006   B. 2014
   C. 2002   D. 1997

7. The Green Bank Telescope is fully steerable and_____% of the entire celestial sphere can be accessed.

8. The Sugar Grove Station is a National Security Agency (NSA) communications site which, according to a 2005 article in the New York Times, intercepted all international communications entering the
   A. Northern United States   B. Pacific Northwest
   C. Eastern United States   D. Washington D.C. metroplex

9. Locals jokingly call the Green Bank Telescope the
   A. Great Big Thing   B. Gang Bang Thang
   C. Gravity Based Triad   D. Giant Black Terror

10. In September of 2014, scientists used the GBT to discover that our Milky Way Galaxy is located in a super cluster of galaxies that is
   A. 100 billion miles in diameter   B. 500 million light years across
   C. composed of 250 million stars   D. equivalent to 100 billion suns

11. The focus of Breakthrough Listen is to
   A. search for anomalies given off by stars and planets
   B. find harmony in the universe
   C. identify extraterrestrial communication
   D. locate the source of unidentified wavelengths

12. On May 10, 1968, the Sugar Grove Observatory was activated as
   A. Sugar Grove Naval Base
   B. The National Telescope and Radio Tower at Sugar Grove
   C. Sugar Grove Radio Astronomy Center
   D. Naval Radio Station Sugar Grove

13. The Sugar Grove Observatory was first developed as the site of a 600-foot radio telescope that would gather information on
   A. all communications from extraterrestrials
   B. the Milky Way galaxy
   C. Soviet radar and radio signals reflected from the moon
   D. hydrogen clouds that exist between galaxies

14. The receiving dish of the GBT is 100 meters in diameter which is equal to
   A. 2.3 acres   B. 3200 feet
   C. 1.2 miles   D. 47 hectares

15. In 2014, what happened to the Green Bank Telescope?
    A. Congress did not vote to fund it.
    B. It received new framing to keep it from sagging.
    C. It was moved so that it received better signal from outer space.
    D. The National Radio Telescope Association sold it.

16. The National Quiet Zone is located in all of these states except
    A. Virginia   B. West Virginia
    C. Pennsylvania   D. Maryland

17. The National Radio Astronomy Observatory's first telescope was_____feet in diameter.

18. Frank Drake called his project
    A. Extra-Terrestrial Search   B. Ozma
    C. Tatle   D. Milky Way Exploration

True/False

19. Groundbreaking for the GBT was in 1991 and operations began in 2001.

20. In 2006, by using the GBT, a large, coil-shaped magnetic field was located in the Messiner molecular cloud.

21. Although Breakthrough Listen uses information gleaned from the Green Bank Observatory, the Parkes Observatory, and the Automated Planet Finder, its findings are only available to scientists and military experts.

22. The National Radio Quiet Zone restricts radio transmissions including the use of cell phones, wireless networks, satellite television and microwaves.

23. At the last national census in 2010, its population was 36.

24. On July 26, 2016, the Sugar Grove Station was auctioned off with a winning bid of $11.2 million by an investment group out of Alabama.

25. In 1961 that Frank Drake presented the Drake Equation which he had developed to estimate the total number of detectable extraterrestrial civilizations found in the Milky Way galaxy.

"The Green Bank Telescope"

1. B

2. A

3. D

4. D

5. B

6. C

7. 85 (eighty-five)

8. C

9. A

10. B

11. C

12. D

13. C

14. A

15. A

16. C

17. 85 (eighty-five)

18. B

19. True

20. False

21. False

22. True

23. False

24. False

25. True

UIL LISTENING CONTEST - GRADES 7 & 8
SPRING MEET 2018/2019

Contest Script- "Theodore Roosevelt"

Have you ever wondered why stuffed bears are referred to as "Teddy Bears"? There are no species of bears whose name is related to the word Teddy. In 1902, the term originated because of an incident with a bear and the US President at the time, Theodore Roosevelt.

Theodore Roosevelt Jr. was born in New York City on October 27, 1858. His parents were Martha Stewart Bulloch and Theodore Roosevelt. He was the second of four children. He had an older sister named Anna who was nicknamed Bamie, a younger brother named Elliott, and a younger sister named Corinne. His father was a **1:00** businessman, and his family owned a plate-glass business. When he was young, Theodore was often sick and had to wear glasses due to poor eyesight. He suffered from asthma so extreme that when he experienced nighttime attacks, it gave him the feeling of being smothered to death.

Although doctors had no cure for asthma at that time, Theodore didn't let it keep him from playing and learning. When he was seven years old, he began to be interested in zoology. He saw a dead seal at a local market and made a point of obtaining the seal's head. He and two of his cousins then formed what they called the "Roosevelt Museum of Natural History". He learned the basics of taxidermy and filled his museum with animals that he killed or caught, then studied and prepared for display. When he was nine, he wrote a paper entitled "The Natural History of Insects" in which he recorded **2:00** what he had learned through his observation of insects.

Because of his illness, Theodore was homeschooled and was taught by tutors. But, as he grew older, his father encouraged him to exercise and workout including weightlifting. Because of this strenuous program, he began to grow stronger and developed a lifetime

love of exercise. When his family went hiking in the Alps in 1869, Theodore realized that he could keep pace with his father. This encouraged him to continue working out. After being bullied by two older boys on a camping trip, he found a boxing coach to teach him to fight and added boxing to his workout routine.

He encouraged all of his family to live what later became referred to as a strenuous life as opposed to a life of ease and pleasure. His father strongly influenced his life in other ways as well. Roosevelt often spoke of his father as the best man he ever knew. His father was a prominent leader in New York's cultural affairs and helped to found the Metropolitan Museum of Art.

3:00

He took his family on trips overseas including touring Europe in 1869 and 1870 and visiting Egypt in 1872. This gave young Theodore a broader view of the world. His father died unexpectedly on February 9, 1878. He began to throw himself into his studies and planned to focus on biology and nature. However, as Theodore grew, he began to display a wide range of intellectual curiosity. He graduated from Harvard College in 1880. When his father died, Theodore inherited $125,000, which was enough to keep him comfortable for the rest of his life. He abandoned his intent to focus on environmental issues and attended Columbia Law School.

4:00

He found law school to be irrational and began writing a book about the War of 1812. It was then that he decided to pursue a career in writing and politics instead. Assisted by two uncles, he scoured original source materials and official U.S. Navy records in order to write meticulously about the role the Navy played in the war. His carefully researched book, published in 1882, remains one of the most important scholarly studies of the war to date.

Roosevelt joined the New York State Assembly as a representative from New York City. He was the youngest to ever serve in that position. He held several other public service positions including captain of the National Guard and minority leader of the New York

5:00 Assembly. On his 22nd birthday in 1880, he married Alice Hathaway Lee. They had one daughter named Alice who was born on February 12, 1884. However, on February 14, 1884, his mother and his wife both died tragically. This propelled him to leave for the Dakota Territory for two years. While he was there, he became increasingly concerned about protecting the environment of the West. He lived there as a cowboy and cattle rancher while his elder sister took care of young Alice. He returned to political life in 1886 when he ran for the New York City mayor but was defeated. At this time, he married Edith Kermit Carow whom he had known as a child. They lived the rest of their lives at Sagamore Hill, an estate near Oyster Bay, Long Island, New York. They had five children: Theodore, Kermit, Ethel, Archibald, and Quentin.

6:00 Roosevelt was known as a foe of corrupt politics. He remained active in politics and became a member of the US Civil Service Commission from 1889 – 1895 and as the president of the New York City Board of Police Commissioners. When he was appointed as the assistant secretary of the Navy by President William McKinley, he pushed to have a bigger navy and to declare war with Spain. When war was declared in 1898, he organized the 1st Volunteer Cavalry, known as the Rough Riders. They were sent to fight in Cuba. Roosevelt led the charge of the Rough Riders on foot up Kettle Hill during the Battle of Santiago in 1898. This made him the biggest national hero to come out of the Spanish American War. He was nominated for the Medal of Honor and was elected governor of the state of New York in 1898.

7:00 Unlike most Republicans of that day, Roosevelt was a progressive. He fought to remove corrupt officials and enacted legislation to regulate corporations and the civil service. In an effort to rein him in, Republican Party bosses decided to draft him as the Republican Vice-President nomination in 1900. However, in 1901, President McKinley was assassinated, and at the age of 42, Theodore Roosevelt became the youngest man to enter the US Presidency.

Although while running for Vice-President Roosevelt promised to hold true to McKinley's policies, once he became President, he began to make changes. He gave a new name to the executive mansion – the White House. He began to entertain in the White House including cowboys, prize fighters, explorers, writers and artists. Although this drew criticism, he ran the White House as a home for his family. He is said to have played with his children and even threw water balloons from the roof. He was known for his fun-loving nature as well as his competitive spirit.

8:00 In 1902, he was invited to go bear hunting with the governor of Mississippi. Although other hunters in the group had been successful, Roosevelt had not. One of his assistants was able to catch a bear and tie it to a tree suggesting that Roosevelt shoot it there. Roosevelt said that it would be extremely unsportsmanlike and refused. When this story hit the media, a toy maker began making stuffed bears and selling them with the name "Teddy Bear". This was the origin of the Teddy bears we know and love today.

The new energy he brought to the White House along with his domestic and foreign policies helped him to win a second term as President in 1904. He became known as the great "trust buster" for his efforts to break up industrial monopolies under the Sherman Antitrust Act. He was also widely known as a dedicated conservationist. During his presidency, he urged Congress to create the Forest Service in 1905 to manage **9:00** government-owned forests and appointed Gifford Pinchot to head the agency. He also used his authority as President to designate public lands as national forests. This made them off-limits for use as lumber, minerals, or waterpower. In fact, Roosevelt set aside almost five times as much land as all of his predecessors combined. During his presidency, he set aside 194 million acres as protected land. In commemoration of his dedication to conservation, the Theodore Roosevelt National Park was created in North Dakota as well as Theodore Roosevelt Island, a 91-acre wooded island in the Potomac River in Washington, DC, were named in his honor.

10:00 As the 1908 election drew near, Roosevelt decided to honor a pledge that he had made in 1904 to not seek another term as President. He felt that term limits were needed in order to prevent a dictatorship. He supported the Secretary of War, William Howard Taft, to succeed him. Immediately after leaving office in January of 1909, Roosevelt left for a 10-month safari in Africa and a tour of Europe. When he returned, he found that President Taft had not followed through on his promise of continuing to create progressive reforms. As a result, Roosevelt campaigned against Taft for the Republican nomination in 1912. When he was unsuccessful, he and his supporters formed the Progressive Party which became known as the Bull Moose Party. While campaigning in Milwaukee, Wisconsin, Roosevelt was shot by saloonkeeper John Schrank in a failed assassination attempt on October 14, 1912. He was not seriously wounded, but doctors

11:00 thought it was too dangerous to attempt to remove the bullet. Roosevelt carried that bullet inside him for the rest of his life.

The Bull Moose Party disbanded in 1914. Beyond his life in politics, Roosevelt was a prolific writer. He published more than 25 books. He wrote on a wide range of subjects including history, biology, geography and philosophy. He also published a biography and an autobiography including a four volume set entitled *The Winning of the West.* During the winter of 1914, Roosevelt and his son Kermit went on an expedition to explore the River of Doubt in Brazil. He came down with a tropical fever and seriously injured his leg. Although he was able to recover, this ordeal severely affected his health. On January 6, 1919, at Sagamore Hill, Theodore Roosevelt died in his sleep of an arterial

12:00 blood clot. He was 60 years old. He was buried at the Youngs Memorial Cemetery in New York.

On January 16, 2001, President William Clinton posthumously awarded Theodore Roosevelt the Medal of Honor for his charge up San Juan Hill in Cuba during the Spanish-American War. This award was accepted on his behalf by his great-grandson, Tweed Roosevelt.

A+ ACADEMICS

University Interscholastic League

Listening
grades 7 & 8

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

"Theodore Roosevelt"

1. Theodore Roosevelt became interested in the study of zoology when he
    A. visited the National Zoo in Washington DC on a school field trip.
    B. saw a dead seal at a local market and purchased its head for study.
    C. worked at a local veterinarian's office and learned about animal anatomy.
    D. lived and worked on a ranch for 2 years after the death of his wife.

2. One important cultural accomplishment of Roosevelt's father was to
    A. take a tour of Europe and Africa.
    B. help design the Museum of Natural History in Washington DC.
    C. contribute to the founding of the New York Metropolitan Museum of Art.
    D. set aside land for National Parks and Monuments throughout the country.

3. While serving as assistant secretary of the Navy under William McKinley, Roosevelt
    A. formed the Rough Riders and sailed to protect the beaches of Cuba.
    B. fought to remove corrupt officials and destroy monopolies.
    C. pushed for a larger Navy and to declare war with Spain.
    D. fought against war and promoted progressivism instead.

4. Theodore Roosevelt married his first wife, Alice, on
    A. February 12, 1884   B. February 9, 1878
    C. October 14, 1912   D. October 27, 1880

5. Roosevelt's autobiographical 4-volume set of books was called
    A. *Winning the West*   B. *Rough Riders*
    C. *From Illness to the Presidency*   D. *Living the Strenuous Life*

6. Theodore learned to box as a result of
    A. watching a boxing match while overseas on a European tour.
    B. needing some way to continue cardiovascular exercise for his asthma.
    C. searching for a sport that he could share with his sons.
    D. being bullied by older boys while on a camping trip.

7. How many children did Theodore and Edith Roosevelt have? _____

8. After the death of his wife, Alice, Theodore Roosevelt
   A. moved to the Dakota Territory where he lived and worked for 2 years.
   B. sought to improve health care for pregnant women and children.
   C. ran for Governor of New York but lost.
   D. removed himself from politics to focus on raising his daughter.

9. Roosevelt dropped out of law school because
   A. he did not agree with the opinions of his professors.
   B. he found the work to be irrational.
   C. he was elected to represent New York City in the New York Assembly.
   D. the United States entered the Spanish-American War.

10. How many years did Roosevelt serve on the US Civil Service Commission?
    A. 5   B. 6
    C. 7   D. 8

11. In an effort to dampen Roosevelt's progressive influence, Republican party leaders
    A. encouraged voters not to vote for Roosevelt in the mayoral election.
    B. sought out traditional candidates to run against him.
    C. put him on the ticket as a Vice-Presidential candidate.
    D. encouraged him to write a book about the Spanish-American war.

12. For his efforts to break up industrial monopolies under the Sherman Antitrust Act,
    Roosevelt became known as
    A. the Rough Rider   B. Sherman's Trust Tyrant
    C. the trust buster   D. the monopoly mitigator

13. Roosevelt was elected to his second term in
    A. 1902   B. 1918
    C. 1912   D. 1904

14. During his presidency, how many acres did Roosevelt set aside as protected land?
    A. 200 million   B. 198 thousand
    C. 194 million   D. 300 thousand

15. How old was Theodore Roosevelt when he died? _____

16. Why did Roosevelt believe that term limits were important to the Presidency?
    A. He worried that a president without term limits could become a dictator.
    B. He believed there should be a balance of power between the two parties.
    C. He thought that a younger president could bring fresh ideas.
    D. It was an integral part of the Progressive platform.

17. Which President awarded Theodore Roosevelt the medal of honor?
    A. William McKinley   B. William Howard Taft
    C. William Clinton   D. William Matthew Stafford

18. Roosevelt served in all of the following offices except
    A. Governor of New York   B. Vice-President of the US
    C. captain in the National Guard   D. New York Assembly majority leader

True/False

19. Theodore Roosevelt Jr. was born in New York City on October 27, 1858 to Martha Stewart Bulloch and Theodore Roosevelt as the second of four children.

20. Theodore Roosevelt Sr. worked hard all his life so that his family could live a life of ease and pleasure as opposed to what he referred to as a strenuous life.

21. When war was declared in 1888, Roosevelt organized the 1st Volunteer Cavalry, known as the Rough Riders who were sent to capture Cuba.

22. While campaigning in Milwaukee, Wisconsin, Roosevelt was shot by actor John Schrank in a failed assassination attempt on October 14, 1912.

23. During the winter of 1914, Roosevelt and his son Kermit went on an expedition to explore the River of Doubt in Brazil where he came down with a tropical fever and seriously injured his leg.

24. On January 6, 1919, at Sagamore Hill, Theodore Roosevelt died in his sleep of an arterial blood clot.

25. The Bull Moose Party disbanded in 1914.

"Theodore Roosevelt"

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

14. C
15. 60 years old (sixty years old)
16. A
17. C
18. D
19. True
20. False
21. False
22. False
23. True
24. True
25. True

FOR GRADER USE ONLY
Score Test Below:

_____ Initials_____

_____ Initials_____

Papers contending to place:

_____ Initials_____

UIL
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. A	B	C	D
7. A	B	C	D	32. A	B	C	D	57. A	B	C	D
8. A	B	C	D	33. A	B	C	D	58. A	B	C	D
9. A	B	C	D	34. A	B	C	D	59. A	B	C	D
10. A	B	C	D	35. A	B	C	D	60. A	B	C	D
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

A+ ACADEMICS

University Interscholastic League
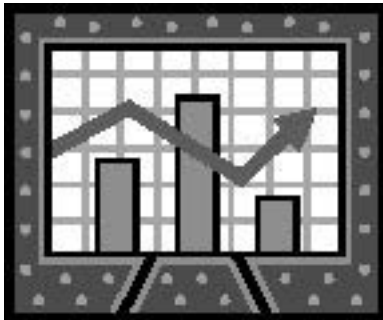
Maps, Graphs & Charts
grades 7 & 8

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

South America

1. What country has two of the largest urban areas in South America?
   - a. Brazil
   - b. Argentina
   - c. Colombia
   - d. Peru

2. How many miles does one inch equal on the elevation map cross-section?
   - a. 1,000
   - b. 315
   - c. 220
   - d. 100

3. What is the climate type for most of central Brazil?
   - a. tropical
   - b. savanna
   - d. marine
   - d. humid subtropical

4. The highest elevations are found in what area of the continent?
   - a. near the northern coast
   - b. near the eastern coast
   - c. near the southern coast
   - d. near the western coast

5. Which city in Argentina has the largest population?
   - a. Rosario
   - b. La Plata
   - c. Formosa
   - d. Buenos Aires

6. Which of the following countries has the highest percentage of indigenous descendants?
   - a. Bolivia
   - b. Colombia
   - c. Venezuela
   - d. Guyana

7. The Uruguay River forms part of the border between Argentina and what other country?
   - a. Chile
   - b. Brazil
   - c. Bolivia
   - d. Paraguay

8. Glacier land cover can be found in what country?
   - a. Chile
   - b. Suriname
   - c. Ecuador
   - d. Guyana

9. What do the pink lines on the land cover map represent?
   - a. shift in land cover type
   - b. time zone boundary
   - c. latitude lines
   - d. international boundary

10. What country's capital is closest to the Equator?
    - a. Ecuador
    - b. Brazil
    - c. Colombia
    - d. Peru

11. What percentage of modern medicine is developed from rain forest plants?
    - a. 15%
    - c. 25%
    - b. 20%
    - d. 30%

12. Which of the following resources can be found in French Guiana?
    - a. oil
    - b. natural gas
    - c. iron
    - d. gold

13. The Falkland Islands are a territory of what country?
    - a. U.S.
    - b. U.K.
    - c. Brazil
    - d. France

14. What is the elevation of Mt. Chimborazo in Ecuador?
    - a. about 10,000 feet
    - b. about 15,000 feet
    - c. about 20,000 feet
    - d. about 25,000 feet

15. Which of the following crops grows best at higher elevations?
    - a. barley
    - b. bananas
    - c. rice
    - d. cacao

Trinity Park: *Mountain Bike Trails*

N

10 miles Smithville / Cooper 25 miles

Park Entrance

P

Wallace Pond
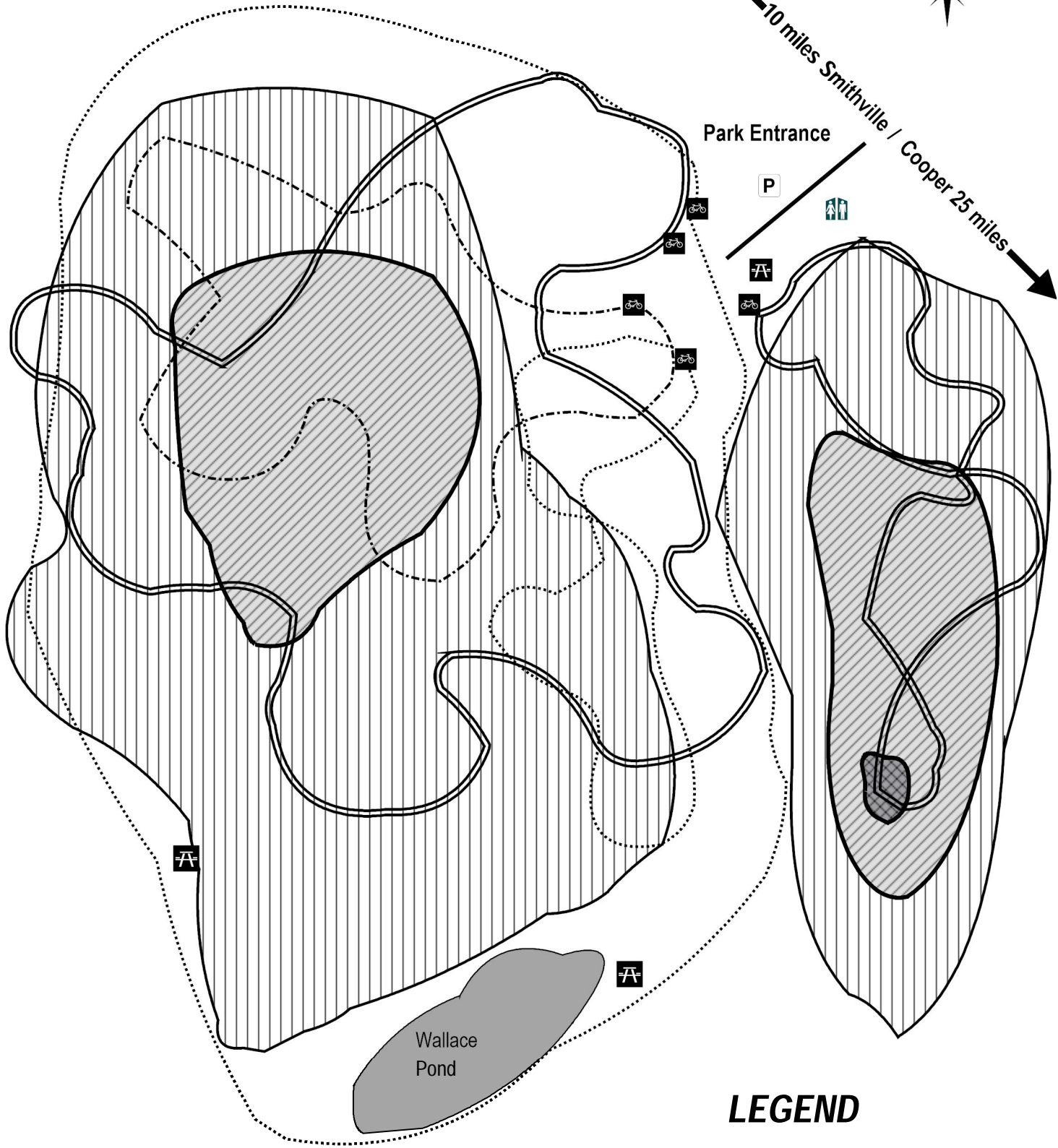
LEGEND

Easiest Trails

Advanced Trails

Expert Trails

Elevation in Feet

600-700

300-600

100-300

Parking P

Bathroom

Picnic Area

Bike Trail Start

1 inch = .5 miles

Trinity Park: Mountain Bike Trails

16. What does the symbol of the bike represent?
    a. bike repair shop
    b. picnic area
    c. bike trail start
    d. bathrooms

17. How many types of bike trails are there in the park?
    a. 1
    b. 2
    c. 3
    d. 4

18. Two inches on the map would equal how many miles?
    a. .5
    b. 1
    c. 2
    d. 4

19. What does the solid double line represent?
    a. highway
    b. easy trail
    c. advanced trail
    d. expert trail

20. Which type of trail goes the furthest south?
    a. highway
    b. easy trail
    c. advanced trail
    d. expert trail

21. How many parking areas are indicated on the map?
    a. 0
    b. 1
    c. 2
    d. 3

22. What is the highest elevation on the map?
    a. 100-300 feet
    b. 300-600
    c. 600-700
    d. 700-900

23. How many miles is it to the nearest town?
    a. 5
    b. 10
    c. 20
    d. not indicated on the map

24. What type of trail goes through the highest elevation?
    a. highway
    b. easy trail
    c. advanced trail
    d. expert trail

25. How many advanced trails are there?
    a. 1.
    b. 2
    c. 3
    d. 4

TRUE/FALSE

26. One of the advanced trails runs just south of Wallace Pond.

27. Cooper is 25 miles north of the park.

28. There are an equal number of expert and easy trails.

29. There are more picnic areas by the advanced trails than there are by the other types of trails.

30. The highest elevation an easy trail reaches is the 100-300 feet level.

Monthly Averages: Visitors And Bikes Entering Trinity Park
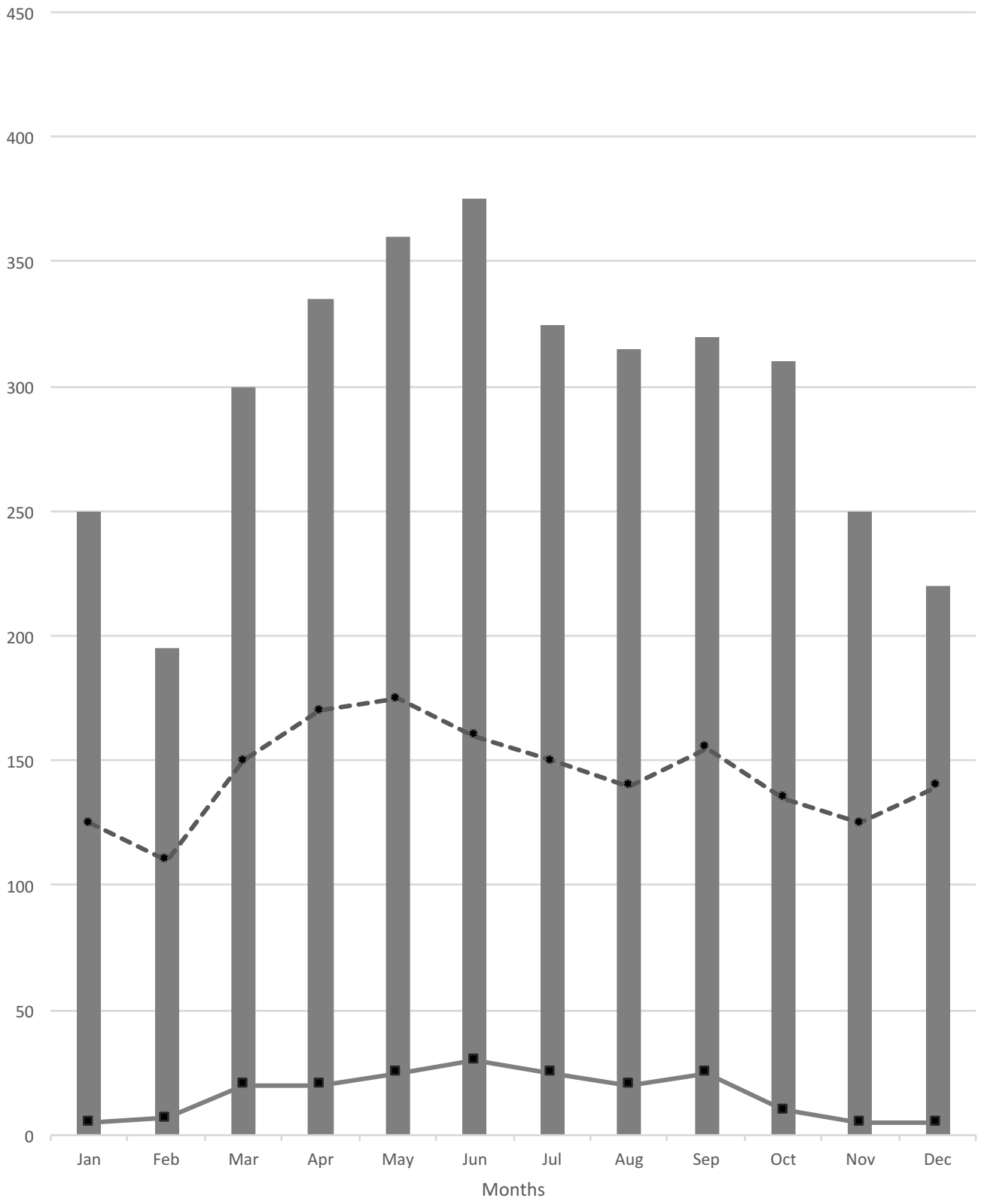
Legend: Number of Visitors — Overnight Campers — Bikes Brought to Park

X-axis: Months (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec)

Trinity Park: Monthly Averages

31. What does the dotted line represent?
    a. number of visitors per month
    b. overnight campers
    c. bikes brought into park
    d. average temperatures for each month

32. Which month had the fewest number of visitors?
    a. September
    b. May
    c. August
    d. November

33. What information is shown on the x axis?
    a. the month
    b. number of visitors
    c. overnight campers
    d. bikes brought into park

34. In how many months were more than 100 bikes brought into the park?
    a. 0
    b. 6
    c. 8
    d. 12

35. What month had the highest number of bikes in the park?
    a. May
    b. June
    c. July
    d. August

36. The information on the graph represents what year?
    a. 2017
    b. 2018
    c. 2019
    d. not indicated

37. How many months were there around 10 overnight campers?
    a. 2
    b. 5
    c. 6
    d. 0

38. Which two months had the same number of total visitors?
    a. March and September
    b. April and August
    c. February and June
    d. January and November

39. The biggest drop in the number of visitors happened in what month?
    a. September
    b. October
    c. November
    d. December

40. May saw the highest numbers for what single category?
    a. number of visitors per month
    b. bikes brought to park
    c. overnight campers
    d. none

TRUE/FALSE

41. The month with the highest number of visitors also had the highest number of overnight campers.

42. Compared to the previous month, when the number of visitors rises, the number of bikes in the park also rises.

43. February had the lowest numbers for all three categories.

44. Summer months have more overnight campers than winter months.

45. May saw an increase in call three categories.

North America

46. Which of the following is an agricultural product of New Mexico?
    a. beef
    b. dairy
    c. corn
    d. wheat

47. Most of the east coast of the United States falls into what rainfall range?
    a. 10-20 inches
    b. 20-40 inches
    c. 40-80 inches
    d. over 80 inches

48. The largest urban area is in what country?
    a. Greenland
    b. Canada
    c. U.S.
    d. Mexico

49. The climate of Greenland is mainly of what type?
    a. marine
    b. tundra
    c. ice cap
    d. highland

50. The Bering Strait forms a boundary between the U.S. and what other country?
    a. Russia
    b. Canada
    c Mexico
    d. Greenland

51. How far is between the capitals of Belize and Panama?
    a. about 400 miles
    b. about 800 miles
    c. about 1,600 miles
    d. about 3,200 miles

52. Being on the leeward side of a mountain range results in which of the following?
    a. more rain
    b. less rain
    c. longer winters
    d. longer summers

53. Which of the following countries in not part of CAFTA-DR?
    a. Mexico
    b. U.S.
    c. Honduras
    d. Nicaragua

54. The largest percentage of immigrants to the U.S. are from where?
    a. Asia
    b. South America
    c. Middle America
    d. Europe

55. The dotted lines on the political relief map of Canada indicate what?
    a. international boundary
    b. national boundary
    c. province boundary
    d. country boundary

56. Forests cover how much of Canada?
    a. 30%   c. 50%
    b. 40%   d. 60%

57. Volcanoes are most active in which area?
    a. North American Plate
    b. Pacific Plate
    c. Caribbean Plate
    d. South American Plate

58. Which of the following is Cuba's primary trade partner?
    a. U.S.
    b. China
    c. Venezuela
    d. European Union

59. What is the fastest growing means of transportation in the U.S.?
    a. air   c. bus
    b. car   d. train

60. Which of the following statements about U.S. farms is not true?
    a. the number of farms is decreasing
    b. farm sizes are decreasing
    c. farm population has been decreasing
    d. all are true

Mountain Bike Race Entries by Year and Level

Level	2015	2016	2017
Summit - Expert	35	30	40
Summit - Beginner	40	30	35
Trinity - Expert	40	50	45
Trinity - Beginner	50	45	35
Peak - Expert	55	65	45
Peak - Beginner	50	60	55

■ 2015   ■ 2016   ═ 2017
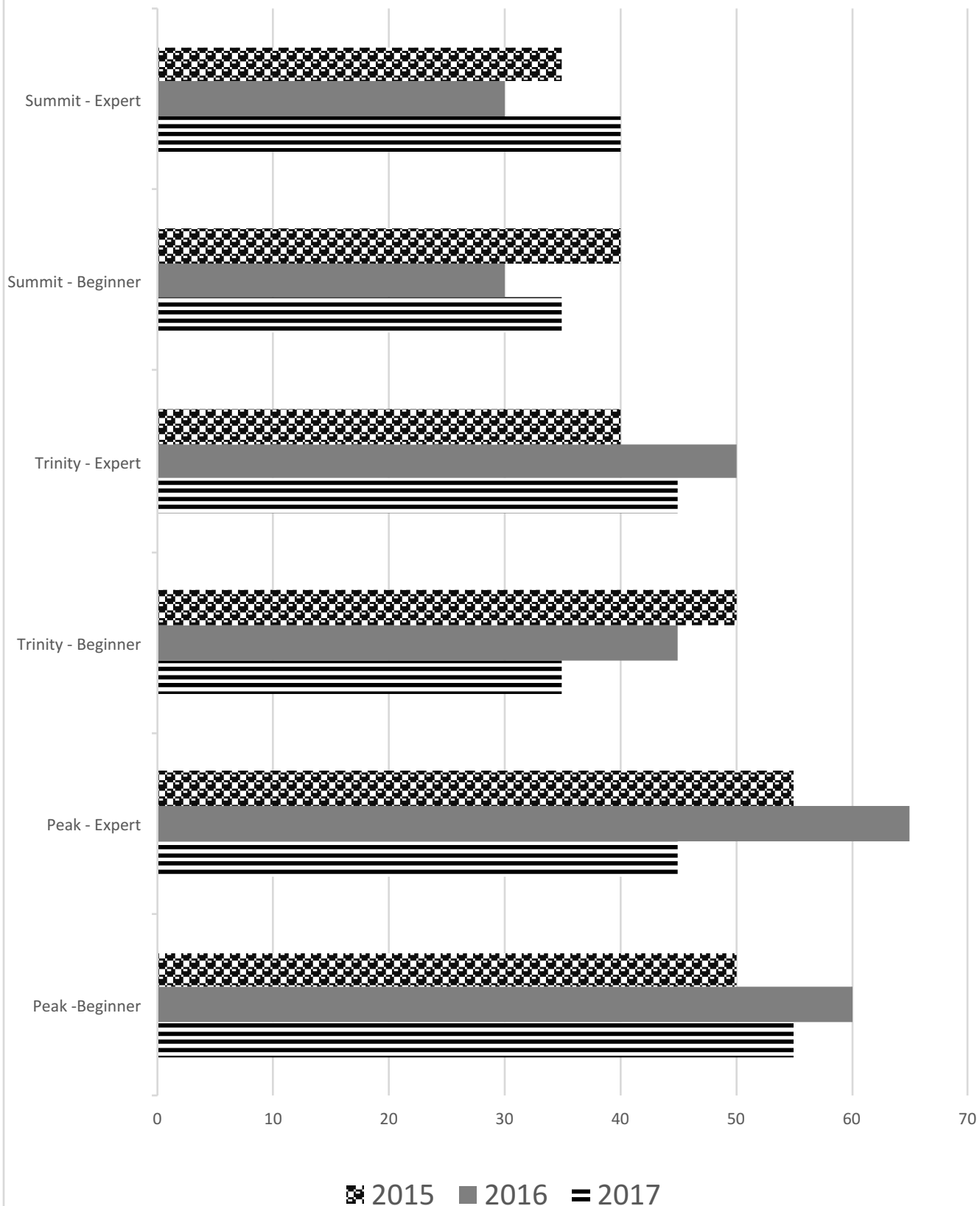
Mountain Bike Race Entries by Year and Level

61. How many years are represented on the graph?
    - a. three
    - b. four
    - c. five
    - d. six

62. What does the striped bar represent?
    - a. the year 2015
    - b. the year 2016
    - c. the year 2017

63. What year did Summit have more beginners than experts?
    - a. 2015
    - b. 2016
    - c. 2017

64. Which year had the highest total entries?
    - a. 2015
    - b. 2016
    - c. 2017

65. How many categories per year are displayed?
    - a. one
    - b. two
    - c. three
    - d. four

66. How many different race locations are on the graph?
    - a. one
    - b. two
    - c. three
    - d. four

67. Which race had the most beginners in a single year?
    - a. Summit
    - b. Trinity
    - c. Peak

68. What year had the highest total amount of experts for all locations?
    - a. 2015
    - b. 2016
    - c. 2017

69. How many times did beginners outnumber the experts at Peak?
    - a. 6
    - b. 5
    - c. 3
    - d. 1

70. Which single race category had the highest participation in 2016?
    - a. Summit- Expert
    - b. Summit- Beginner
    - c. Trinity- Beginner
    - d. Peak- Expert

TRUE/FALSE

71. The least popular expert site was Summit for all three years.

72. Summit had an equal number of experts and beginners in 2016.

73. The graph indicates races held later in the year have higher participation.

74. Trinity had higher participation than Summit every year in every category.

75. The x axis provides information on the number of participants.

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

A+ ACADEMICS

University Interscholastic League
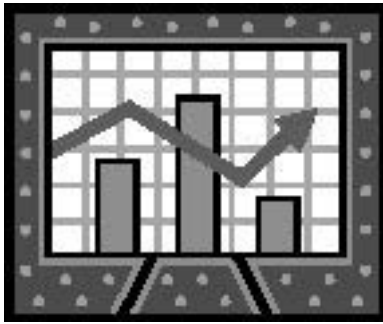
Maps, Graphs & Charts

grades 7 & 8

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

Asia

1. The International Date Line runs through what body of water?
   a. Atlantic Ocean
   b. Arctic Ocean
   c. Indian Ocean
   d. Pacific Ocean

2. The Arabian Peninsula is mainly made up of what type of land cover?
   a. cropland
   b. grassland
   c. semidesert and desert
   d. tundra

3. Which of the following countries is not a leader in oil exports?
   a. China   c. Iraq
   b. Saudi Arabia   d. Russia

4. The world's coldest continually inhabited settlement is in what country?
   a. Antarctica
   b. China
   c. Iceland
   d. Russia

5. Which of the following cities is not on the Yangtze River?
   a. Chongqing
   b. Hong Kong
   c. Nanjing
   d. Wuhan

6. The Persian Gulf lies between Saudi Arabia and what country?
   a. Iran
   b. Iraq
   c. Oman
   d. Yemen

7. What is the region's most densely populated country?
   a. Indonesia
   b. Malaysia
   c. Japan
   d. Singapore

8. The highest peak on the continent is in what country?
   a. Japan
   b. Nepal
   c. Russia
   d. India

9. Buddhism is a predominant belief in which of the following
   a. China
   b. India
   c. Philippines
   d. Thailand

10. Spratly Island is a territory of what country?
    a. Japan   c. Turkey
    b. Russia   D. Disputed

11. Which of the following is the largest urban area in Asia?
    a. Muscat, Oman
    b. Tokyo, Japan
    c. New Delhi, India
    d. Bangkok, Thailand

12. Mount Everest is…
    a. sinking about 5 millimeters per year
    b. sinking about 2 millimeters per year
    c. growing about 5 millimeters per year
    d. growing about 2 millimeters per year

13. Tundra can be found in which of the following countries?
    a. South Korea   c. Iran
    b. Russia   d. Taiwan

14. Which of the following cities in Uzbekistan is the largest?
    a. Jizzakh   c. Tashkent
    b. Muynak   d. Samarqand

15. Which country's capital is closest to the equator?
    a. Philippines
    b. Maldives
    c. Taiwan
    d. Yemen

Star City Summer Film Festival

Park Map Detail

CITY PARK

Children's Cinema Park

Poolside Movies

N

CITY PARK

Buttercup Lane

Flower Street

Buttercup Lane

Rosewood Avenue.

Bluebonnet Blvd.

River Road

Scott Street

Main Street

1st Street

University Blvd.

CAM
PKP
ART
STT
HST
BUS
MRH
BRN
AST
HST
RET
TTH
CTC
SAC

Shuttle Parking

Scot Street Shuttle

Main Street Shuttle

University Shuttle

N
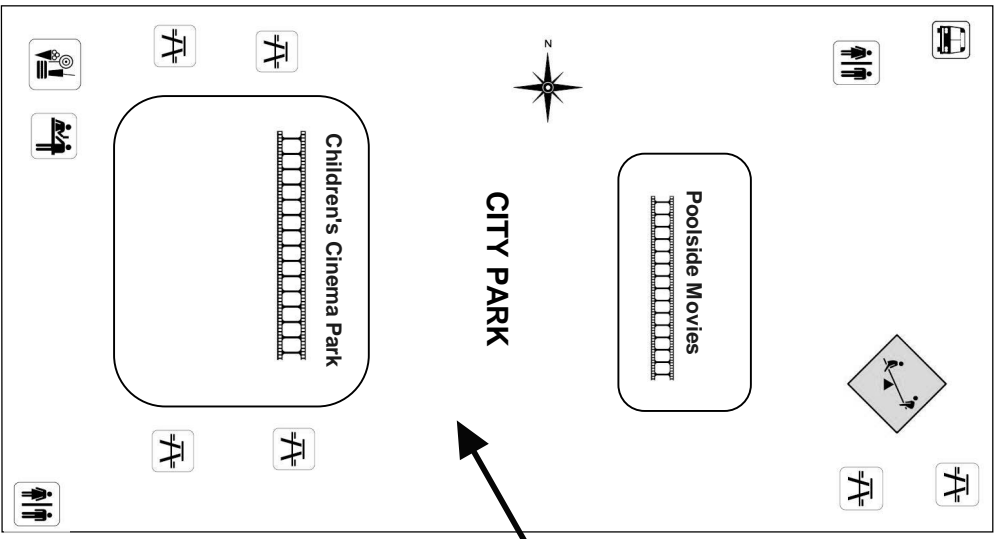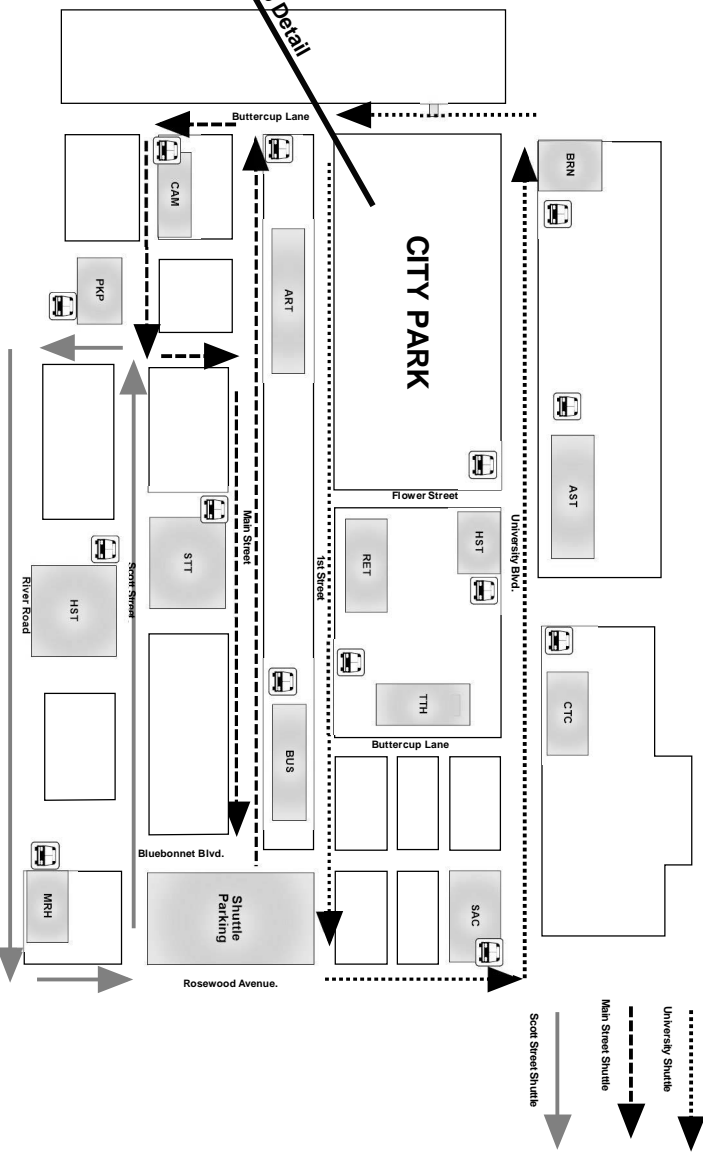
Venues

- **Art** Art House Theatre
- **AST** Astro Hotel
- **Brn** Burn Museum
- **BUS** Business College
- **CAM** Camera Shoppe
- **CTC** City Center
- **GGL** Glover Gallery
- **HST** History Museum
- **MRH** Moore House
- **PKP** Park Plaza
- **RET** Regal Theatre
- **SAC** Summer Art Center
- **STT** Sunset Theatre
- **TTH** Torres Theatre

Concessions

Ticket Sales

Picnic Area

Restrooms

Film Festival Shuttle
Shuttle Hours: 11 a.m
to 1:00 a.m.

16. One inch equals how many miles on the map?
    a. 0.25
    b. 0.50
    c. 1.0
    d. not indicated

17. How many bus stops are indicated on the map?
    a. 12
    b. 13
    c. 14
    d. 15

18. How many hours do the shuttles run in a 24-hour period?
    a. 1 hour
    b. 12 hours
    c. 13 hours
    d. 14 hours

19. What do the dotted lines represent?
    a. University Shuttle
    b. Main Street Shuttle
    c. Scott Street Shuttle
    d. Streets

20. Which shuttle runs the furthest south?
    a. University Shuttle
    b. Main Street Shuttle
    c. Scott Street Shuttle
    d. Buttercup Lane

21. How many restrooms are indicated on the insert?
    a. 0
    b. 1
    c. 2
    d. 3

22. Which shuttle services Park Plaza?
    a. University Shuttle
    b. Main Street Shuttle
    c. Scott Street Shuttle
    d. None

23. When boarding the University Shuttle at the shuttle parking area, which of the following stops would mean the longest ride?
    a. Burn Museum
    b. Camera Shoppe
    c. History Museum
    d. City Center

24. Ticket sales can be found in what corner of the park?
    a. northwest
    b. northeast
    c. southwest
    d. southeast

25. Which of the following venues is the furthest east?
    a. Business College
    b. Moore House
    c. Sunset Theatre
    d. Torres Theatre

TRUE/FALSE

26. The Main Street Shuttle runs north to south on Buttercup Lane.

27. The area for Poolside Movies is just south of Regal Theatre.

28. Each shuttle services the same number of venues.

29. There are two picnic areas just west of Children's Cinema Park.

30. The Summer Art Center and Astro Hotel are serviced by the same shuttle.

Torres Theatre: Concession Unit Sales

Thursday

- 60
- 125
- 175
- 315
- 225

Friday

- 85
- 115
- 220
- 425
- 345

Saturday

- 70
- 110
- 265
- 515
- 432

Sunday

- 40
- 85
- 145
- 300
- 245

Legend
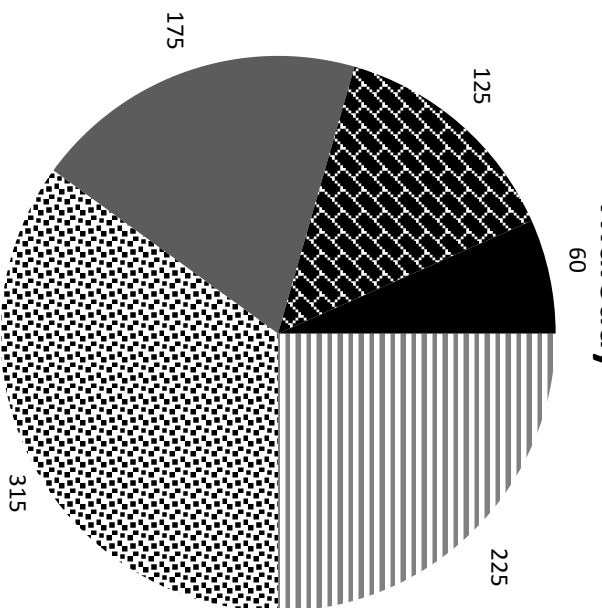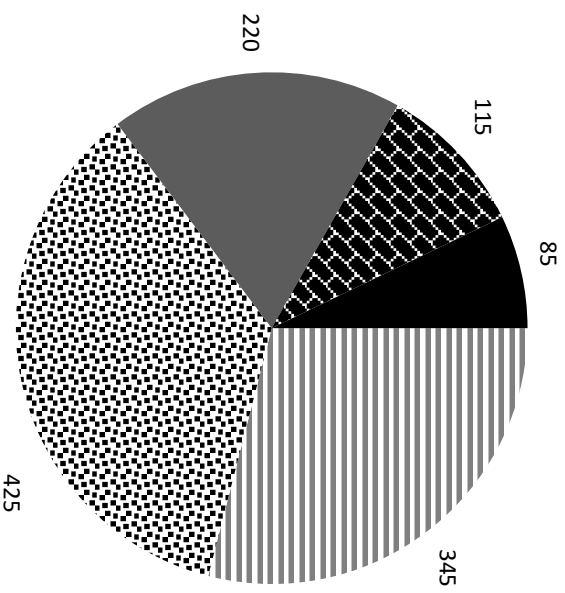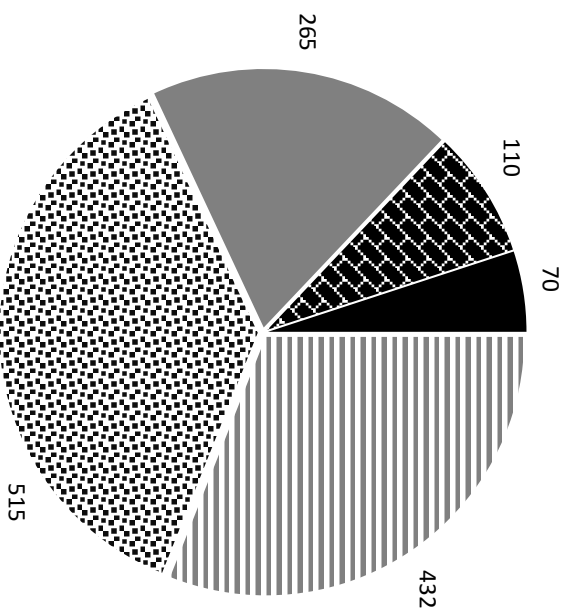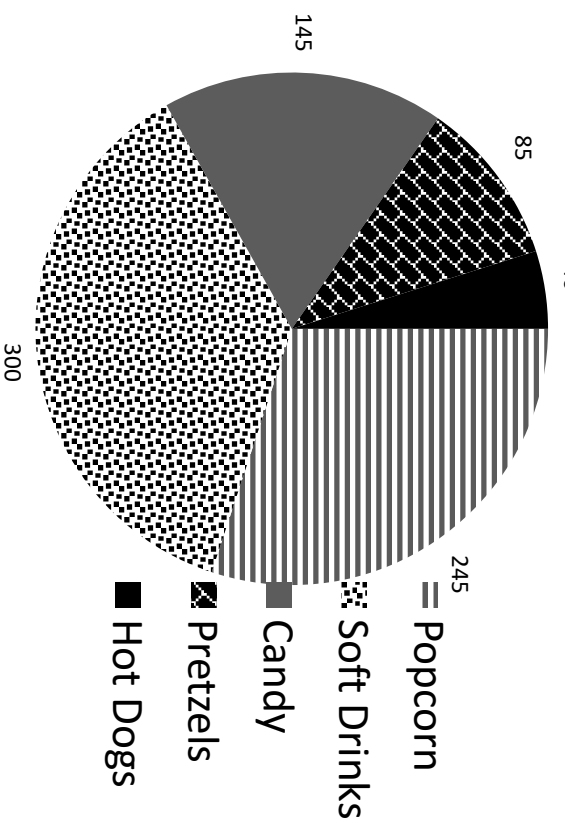
- ▤ Popcorn
- ▦ Soft Drinks
- ▨ Candy
- ▧ Pretzels
- ■ Hot Dogs

Torres Theatre: Concession Unit Sales

31. How much time is represented on the graph?
    a. 4 days
    b. 5 days
    c. 4 weeks
    d. 5 weeks

32. What do the solid grey areas represent?
    a. Saturday
    b. candy
    c. Sunday
    d. Popcorn

33. Which item had the highest number of sales on Sunday?
    a. popcorn
    b. candy
    c. pretzels
    d. soft drinks

34. How many times did soft drinks outsell popcorn?
    a. 1
    b. 2
    c. 3
    d. 4

35. Which of the following items had the highest sales in a single day?
    a. popcorn
    b. candy
    c. pretzels
    d. hot dogs

36. What day had the lowest amount of sales for soft drinks?
    a. Thursday
    b. Friday
    c. Saturday
    d. Sunday

37. How many days did the number of pretzels sold drop below 100?
    a. 1
    b. 2
    c. 3
    d. 4

38. Which item made the most money for the theatre?
    a. soft drinks
    b. popcorn
    c. candy
    d. not indicated on the chart

39. Which item has the biggest difference between its highest and lowest number of daily sales?
    a. popcorn
    b. candy
    c. pretzels
    d. hot dogs

40. What day had the highest number of sales for all items combined?
    a. Thursday
    b. Friday
    c. Saturday
    d. Sunday

TRUE/FALSE

41. The sales of popcorn and soft drinks peaked on the same day.

42. Soft drinks sell twice as well as candy on every day.

43. Friday saw the highest number of sales for three items.

44. Pretzels had the highest percentage of total sales for Thursday out of all the concession items.

45. Popcorn accounted for 25% of total sales on Thursday.

46. Which of the following countries does Australia import the most from?
    a. United States
    b. European Union
    c. Japan
    d. South Korea

47. On the political relief map, one cm equals how many kilometers?
    a. 400
    b. 632
    c. 750
    d. 1000

48. On the political relief map, multi-colored lines in the ocean represent what?
    a. ocean currents
    b. continental boundaries
    c. groups of islands with the same government
    d. areas of dispute

49. What is the vertical exaggeration on the cross section of the elevation map?
    a. 78 to 1
    b. 24 to 1
    c. 470 to 1
    d. 278 to 1

50. The outback covers what percentage of Australia?
    a. 20   c. 60
    b. 40   d. 80

51. Which natural resource can be found in New Zealand?
    a. coal
    b. gold
    c. lead
    d. tin

52. Which of the following indigenous people settled in Hawaii?
    a. Aborigines
    b. Melanesians
    c. Micronesians
    d. Polynesians

53. The ethnic composition of New Zealand is mostly what?
    a. Asian   c. Maori
    b. European   d. Polynesian

54. Suva is the capital of what country?
    a. Fiji   c. Palau
    b. Kiribati   d. Vanuatu

55. What is the population range of Townsville, Australia?
    a. under 1,000
    b. over 50,000
    c. 100,000 to 500,000
    d. over 500,000

56. Which is not of the invasive species found in Australia?
    a. European rabbit
    b. feral pig
    c. kangaroo
    d. sheep

57. What is the elevation of Jaya Peak in New Guinea?
    a. 15,452 feet   c. 18,746 feet
    b. 16,503 feet   d. 18,975 feet

58. How far is it from the capital of Tonga to the capital of Samoa?
    a. about 250 miles
    b. about 350 miles
    c. about 450 miles
    d. about 600 miles

59. Norfolk Island is a territory of what country?
    a. Australia
    b. Japan
    c. Indonesia
    d. United States

60. What is the region's most densely populated country?
    a. Australia
    b. Indonesia
    c. Nauru
    d. Vanuatu

Fall/Winter Grades 7/8 2018-2019

Film Attendance by venue and type:
Saturday August, 25th

Individual Tickets
Festival Passes

Art House
Astro Hotel
Burn Museum
Glover Gallery
History Museum
Moore House
Park Plaza
Regal Theatre
Summer Art Center
Sunset Theatre
Torres Theatre

0 200 400 600 800 1000 1200 1400 1600
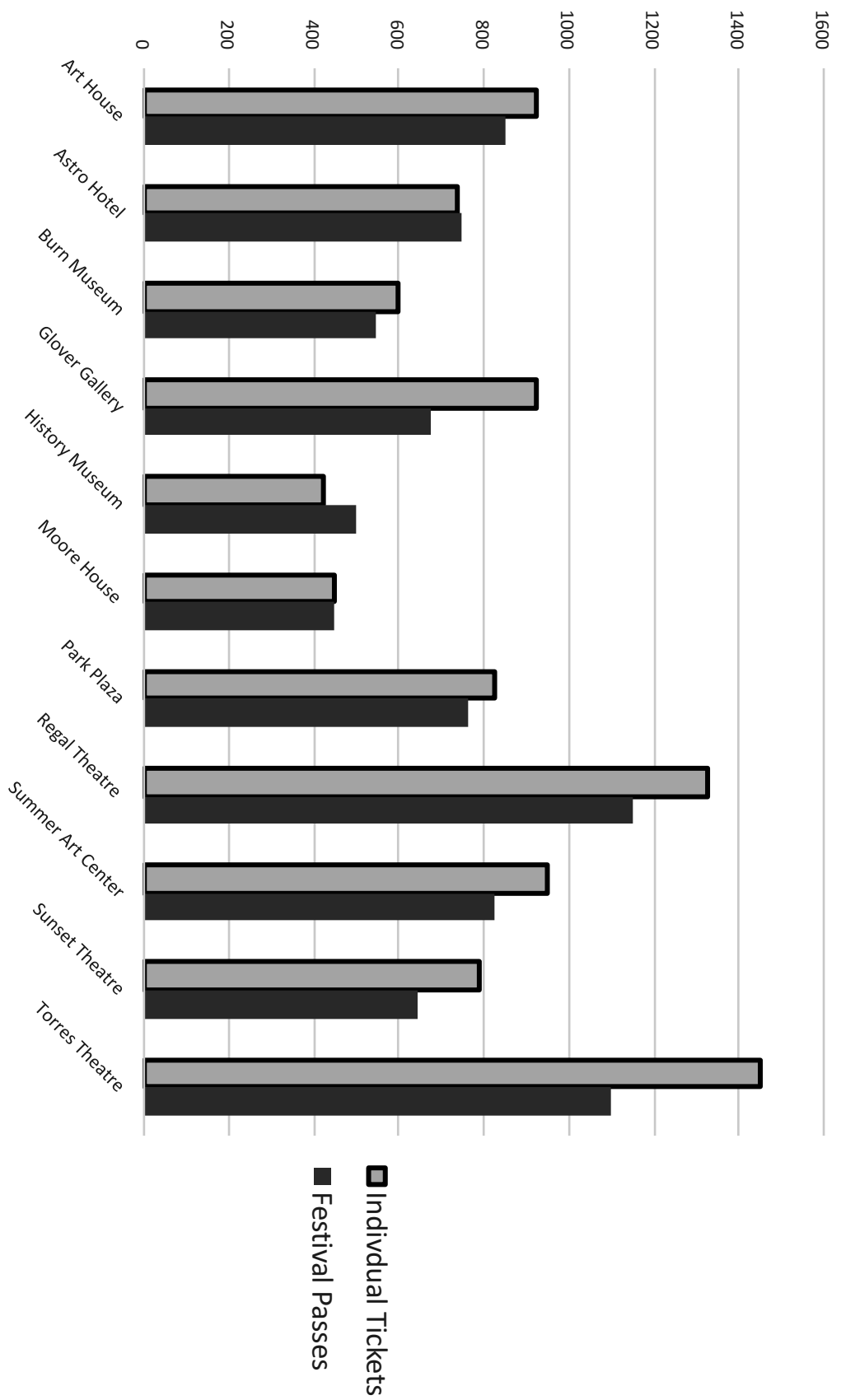
Film Screenings Attendance

61. What do the darker bars represent?
    a. Individual Tickets
    b. Venue
    c. Festival Passes
    d. Number

62. How much time is represented on the graph?
    a. 11 days
    b. 1 day
    c. 1600 days
    d. 7 days

63. At how many venues did festival passes outpace individual tickets?
    a. 0
    b. 2
    c. 4
    d. 6

64. Which theatre had the lowest number of individual tickets?
    a. Moore House
    b. Torres Theatre
    c. History Museum
    d. Park Plaza

65. How many venues are represented?
    a. 1600
    b. 2
    c. 10
    d. 11

66. Which theatre had the highest difference between individual tickets and festival passes?
    a. Moore House
    b. Glover Galley
    c. Torres Theatre
    d. Regal Theatre

67. What does the x-axis represent?
    a. Number
    b. Individual Tickets
    c. Venues
    d. Festival Passes

68. How many venues had fewer individual tickets than Moore House?
    a. 0
    b. 1
    c. 2
    d. 3

69. Which venue had the highest combined total?
    a. Regal Theatre
    b. Art House
    c. Torres Theatre
    d. Summer Art Center

70. How many theatres had less than 500 in both categories?
    a. 11
    b. 8
    c. 4
    d. 1

TRUE/FALSE

71. Torres Theatre had more than twice as many individual tickets as Art House.

72. Regal Theatre had more individual tickets than the Burn Museum had for both categories.

73. The year the data is collected is indicated on the graph.

74. The two venues with the highest number of passes also had the highest number of individual tickets.

75. The graph indicates that the festival made more money on individual tickets than on the sale of festival passes.

Fall/Winter Grades 7/8 2018-2019

University Interscholastic League
A+ Maps/Graphs/Charts Contest • 2018-2019
7/8 Fall/Winter District
Answer Key

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

A+ ACADEMICS

University Interscholastic League
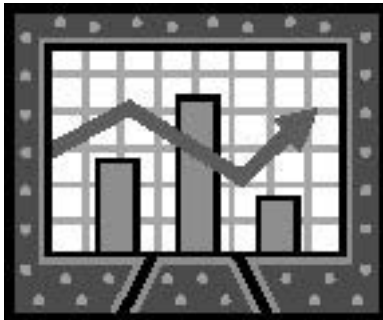
Maps, Graphs & Charts
grades 7 & 8

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

This page is intentionally blank.

Africa

1. How many miles does an inch equal on the Political Relief Map of Southern Africa?
   - a. 423 miles
   - b. 600 miles
   - c. 730 miles
   - d. 820 miles

2. The land cover of the Congo Basin is mostly of what type?
   - a. cropland
   - b. desert
   - c. tropical rain forest
   - d. tundra

3. How many miles is it from the capital of Uganda to the capital of Somalia?
   - a. about 500 miles
   - b. about 700 miles
   - c. about 900 miles
   - d. about 1,100 miles

4. What is the main metal in the country of Nigeria?
   - a. oil
   - b. copper
   - c. nickel
   - d. tin

5. The largest country by population is in what area of the continent?
   - a. eastern
   - b. northern
   - c. southern
   - d. western

6. What is the highest elevation in the country of Chad?
   - a. over 10,000 feet
   - c. 2,000 to 5,000 feet
   - b. 5,000 to 10,000 feet
   - d. 1,000 to 2,000 feet

7. Which country does the Niger river not run through?
   - a. Mali
   - c. Niger
   - b. Egypt
   - d. Nigeria

8. The Great Rift Valley runs through which country?
   - a. Angola
   - b. Gabon
   - c. Mozambique
   - d. Niger

9. What is the main climate type found on Madagascar?
   - a. desert
   - c. steppe
   - b. savanna
   - d. tropical rain forest

10. How many capitals does the nation of South Africa have?
    - a. 0
    - b. 1
    - c. 2
    - d. 3

11. What is the dominant land use in Angola?
    - a. commercial farming
    - b. forestry
    - c. nomadic herding
    - d. subsistence farming

12. What capital is just north of the largest lake on the continent?
    - a. Cairo, Egypt
    - b. Bamako, Mali
    - c. Kampala, Uganda
    - d. Cape Town, South Africa

13. What percentage of the labor force in Niger is involved in agriculture?
    - a. 50%
    - c. 80%
    - b. 75%
    - d. 90%

14. Which of the following has the highest population growth?
    - a. Ethiopia
    - b. Niger
    - c. South Africa
    - d. the world

15. The longest continental mountain range crosses which country?
    - a. Angola
    - b. Congo
    - c. Morocco
    - d. Niger

Sunny Days Music Festival
Festival Park
New Haven, New York
August 10-12, 2018

Restrooms
Water
Food
Parking
First Aid
Information
Exit
ATM
Vendors

(To Downtown)

Baker Street

(To Shuttle Stop)

P

Ticket Sales/
Will Call

Shuttle
Pick Up / Drop Off

Entrance

N

Camping Area

Kiddie Stage

Kiddie Castle Playground

Sunset Stage

Food Court

Main Stage

Sunbeam Stage

Sunrise Stage

Festival Venue
State Highway
City Street
River

Downtown

City
Center

Morgan
Arts Center

University
Park

Festival
Park

Baker Street

45

90

N

Sunny Days Music Festival Map

16. How many festival venues are indicated on the map?
    a. 1
    b. 2
    c. 3
    d. 4

17. What do the gift box icons represent?
    a. Christmas   c. vendors
    b. birthday gifts   d. not indicated

18. What is the scale of the insert compared to the other map?
    a. 4 to 1
    b. 10 to 1
    c. 20 to 1
    d. not indicated

19. What does the dotted line represent?
    a. state highway
    b. city street
    c. river
    d. parking area

20. Which venue is the furthest south?
    a. City Center
    b. Festival Park
    c. Morgan Art Center
    d. University Park

21. Where in Festival Park is the camping area located?
    a. northeast corner
    b. northwest corner
    c. southeast corner
    d. southwest corner

22. How many First Aid stations are shown on the map?
    a. 1
    b. 2
    c. 3
    d. 4

23. The insert shows details for what venue?
    a. City Center
    b. Festival Park
    c. Morgan Art Center
    d. University Park

24. Which stage area is just north of the camping area?
    a. Sunrise Stage
    b. Main Stage
    c. Kiddie Stage
    d. none

25. How many venues can be found along I45?
    a. 1
    b. 2
    c. 3
    d. 4

TRUE/FALSE

26. The festival takes place the last week in August.

27. There are more venues south of Baker Street than north of it.

28. On-site parking for Festival Park is on the northeast side.

29. There is an exit near each corner of Festival Park.

30. There are more vendors than restrooms in Festival Park.

POST MUSIC FESTIVAL SURVEY RESULTS

Legend:
- ■ Percentage of self identified fans of genre
- ▶ Average age of genre fan
- ✕ Average merchandise dollars spent by genre fan

X-axis categories: ELECTRONIC, RAP, ROCK, COUNTRY, JAZZ, CLASSICAL, SOUL, REGGAE

Y-axis: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50
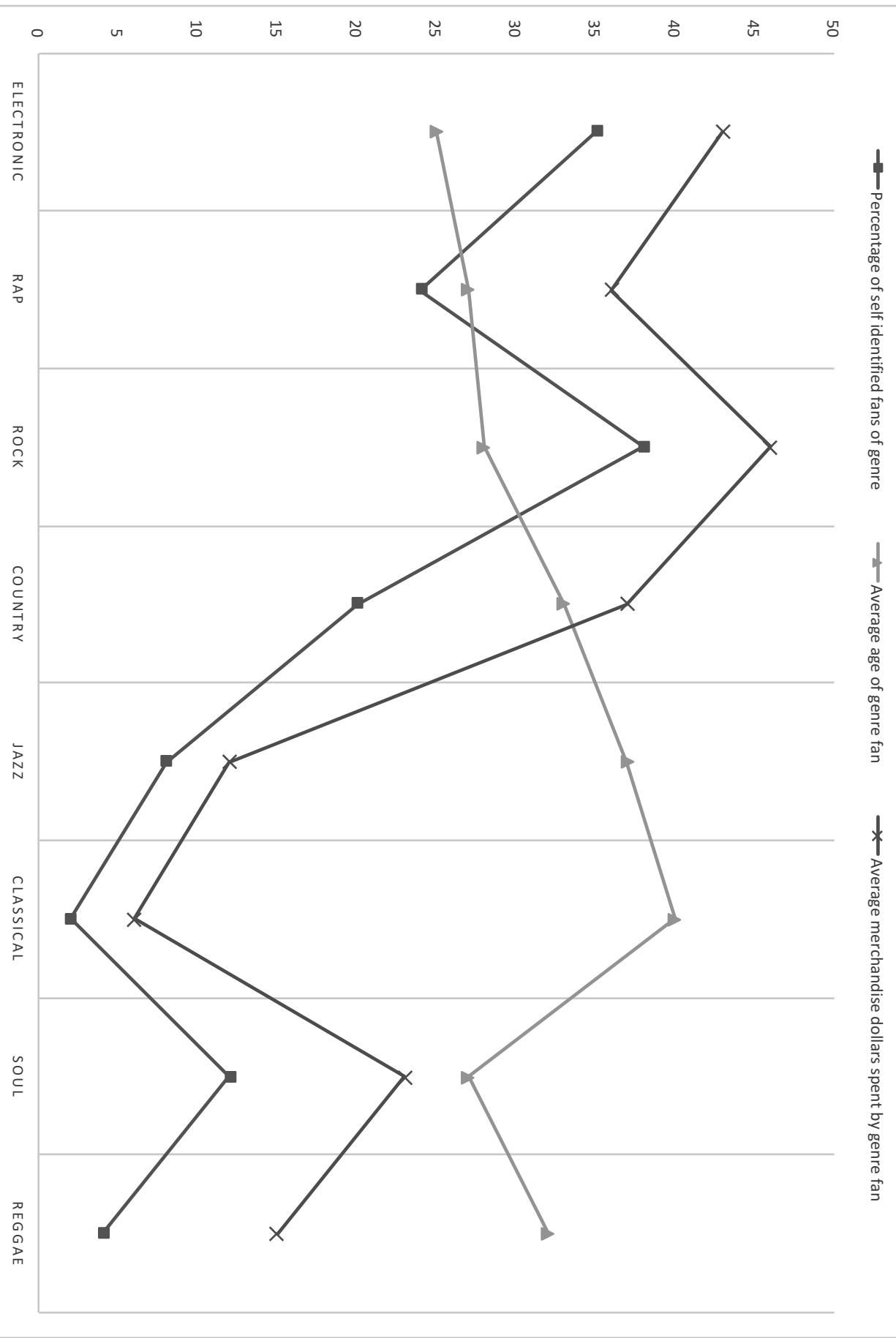
Music Festival Survey

31. What does the line with triangles represent?
    a. genres
    b. average age of genre fan
    c. average amount of dollars spent on merchandise
    d. percentage of fans interested in a particular genre

32. What genre had the highest percentage of self-identified fans?
    a. rock
    b. rap
    c. country
    d. jazz

33. Which genre's fans spent the most on average?
    a. electronic
    b. rap
    c. country
    d. rock

34. Which genre's fans had the lowest average age?
    a. jazz
    b. classical
    c. soul
    d. reggae

35. How many people took part in the survey?
    a. under 100
    b. 100
    c. over 100
    d. not indicated

36. How many genres of music are represented on the graph?
    a. 3
    b. 5
    c. 8
    d. 11

37. How many genres had an average fan age above 30?
    a. 2
    b. 4
    c. 6
    d. 0

38. Which genre with an average fan age over 30 had the highest percentage of self-identified fans?
    a. electronic
    b. rock
    c. classical
    d. rap

39. How many genres had a percentage of self-identified fans above 30%?
    a. 2
    b. 4
    c. 6
    d. 0

40. Which of the following is not represented by the y axis?
    a. age
    b. dollars
    c. attendance in thousands
    d. percentage of fans

TRUE/FALSE

41. The fans of the genre with the oldest average age spent the least money on merchandise.

42. More people are country music fans than soul music fans.

43. The survey was taken after a music festival.

44. The x-axis is ordered from highest genre fan percentage to lowest.

45. Rap fans spent more on merchandise per person than electronic fans.

This page is intentionally blank.

Asia

46. How many of the world's tallest 100 peaks are in Asia?
    a. 10
    b. 40
    c. 80
    d. 100

47. Balqash, Kazakhstan is on the north shore of what body of water?
    a. Caspian Sea
    b. Lake Balkhash
    c. Aral Sea
    d. Arabian Sea

48. The Himalayas are in what area of China?
    a. eastern border
    b. western border
    c. northern border
    d. southern border

49. What do purple areas of the elevation map indicate?
    a. elevation of over 6,000 meters
    b. an elevation range of 3,000 to 6,000 meters
    c. an elevation range of 1,500 to 3,000 meters
    d. an elevation range of 600 to 1,500 meters

50. What capital city can be found below the equator at about 107°E?
    a. Vientiane, Laos
    b. Jakarta, Indonesia
    c. Manila, Philippines
    d. Tokyo, Japan

51. How many types of land cover are shown on the Land Cover Map?
    a. 6
    b. 7
    c. 8
    d. 9

52. Which of the following countries gets the most precipitation?
    a. Iran
    b. Saudi Arabia
    c. Thailand
    d. Afghanistan

53. Gaza is officially part of what country?
    a. Jordan
    b. Israel
    c. Syria
    d. none

54. The area of the continent known as "the cold desert" can be found in what country?
    a. Yemen
    b. Russia
    c. India
    d. Oman

55. Russian territory cannot be found on which regional map?
    a. Southwestern Asia
    b. Central Asia
    c. Eastern Asia
    d. Russian territories noted on all maps

56. Which country is not an OPEC member?
    a. Algeria
    b. Libya
    c. Nigeria
    d. Russia

57. Which of the following Indian cities has the largest population?
    a. Bangalore
    b. Meerut
    c. Patna
    d. Vijayawada

58. China exports the least amount of goods to which country?
    a. Japan
    b. United States
    c. Hong Kong
    d. All others

59. Which country has the highest GDP?
    a. India
    b. Japan
    c. South Korea
    d. Indonesia

60. The longest river on the continent is in what country?
    a. China
    b. India
    c. Japan
    d. Russia

Music Fest: Cost/Sales in Dollars

Legend: Sales, Cost

Category	Value
TOTAL COST/SALES 2017	1068000
TOTAL COST/SALES 2017 (Cost)	739,000
PAYROLL 2017	32000
VENUES 2017	250,000
FOOD/DRINK 2017	58,000 / 25,000
MERCHANDISE 2017	120,000 / 40,000
PRINTING / TICKETS 2017	32,000
BAND BOOKING 2017	890000 / 360,000
TOTAL COST/SALES 2016	974000 / 612,000
PAYROLL 2016	33,000
VENUES 2016	220,000
FOOD/DRINK 2016	60,000 / 27,000
MERCHANDISE 2016	124000 / 54,000
PRINTING / TICKETS 2016	790000 / 28,000
BAND BOOKING 2016	250000

Music Festival Merchandise Sales

61. What years are represented on the graph?
    - a. 2016, 2017
    - b. 2008, 2009
    - c. 2010, 2011
    - d. 2012, 2013

62. What do the darker bars represent?
    - a. sales
    - b. number of bands
    - c. costs
    - d. number of venues

63. What was the single biggest expense in 2016??
    - a. band bookings
    - b. merchandise
    - c. food/drink
    - d. venues

64. Which year had higher sales in Food/Drink?
    - a. 2017
    - b. 2016
    - c. 2008
    - d. 2011

65. Which year had a higher total of sales?
    - a. 2017
    - b. 2016
    - c. 2008
    - d. 2009

66. The cost went down in how many categories in 2017?
    - a. 1
    - b. 4
    - c. 3
    - d. 2

67. Which year had higher profits for merchandise?
    - a. 2008
    - b. 2011
    - c. 2016
    - d. 2017

68. How many separate (not counting annual totals) cost categories are there?
    - a. 2
    - b. 4
    - c. 6
    - d. 5

69. Besides ticket sales, what category had the next highest amount of sales for 2017?
    - a. venues
    - b. merchandise
    - c. band booking
    - d. food/drink

70. How much more did the venues cost in 2017?
    - a. $30,000
    - b. $33,000
    - c. $6,000
    - d. $20,000

TRUE/FALSE

71. Merchandise sales had a higher sales total in 2016.

72. The cost for booking bands doubled in 2017.

73. Venue sales increased by 30,000 from 2016 to 2017.

74. Merchandise had higher sales than Food/Drink sales in both years.

75. The x axis provides sales and cost information in dollars.

University Interscholastic League
A+ Maps/Graphs/Charts Contest • 2018-2019
7/8 Spring District
Answer Key

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

FOR GRADER USE ONLY
Score Test Below:

_____out of 250. Initials_____

_____out of 250. Initials_____

Papers contending to place:

_____out of 250. Initials_____

UiL

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

University Interscholastic League
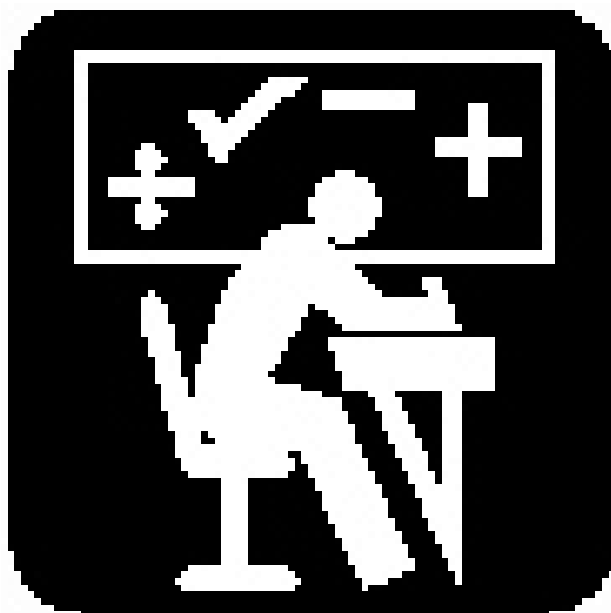
Mathematics

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

2018 – 2019 University Interscholastic League JH/MS Mathematics Contest A

(1) Evaluate: $2^0 + 3^0 - 0.25^{-1}$

A) $-\dfrac{1}{4}$ B) -2 C) $3\dfrac{1}{4}$ D) $1\dfrac{3}{4}$ E) $4\dfrac{1}{4}$

(2) $2\dfrac{2}{3}$ yards + 3 feet – 24 inches = _____

A) 9 ft. B) 13 ft. C) $3\dfrac{2}{3}$ ft. D) $3\dfrac{1}{3}$ E) None of these

(3) $17 \times \dfrac{18}{19} =$ _____

A) $17\dfrac{1}{19}$ B) $16\dfrac{17}{19}$ C) $18\dfrac{1}{19}$ D) $17\dfrac{2}{19}$ E) $16\dfrac{2}{19}$

(4) $12 - 3 \times 4^0 =$ _____
A) 12 B) 36 C) 0 D) 9 E) 5

(5) $1230104 \div 11$ has a remainder of _____
A) 4 B) 6 C) 7 D) 9 E) 10

(6) What is the area of an isosceles triangle with congruent sides 5 cm and other side 8 cm?
A) 20 cm² B) 24 cm² C) 6 cm² D) 12 cm² E) 15 cm²

(7) If the length of the shadow for a yardstick is 24 inches while Noah's shadow is 20 inches long. How tall is Noah?
A) 36 in. B) 34 in. C) 32 in. D) 30 in. E) 28 in.

(8) What is the sum of the prime numbers less than ten?
A) 17 B) 26 C) 15 D) 18 E) 27

(9) One-sixteenth is equivalent to what percent?

A) 16 B) $6\dfrac{1}{4}$ C) $8\dfrac{1}{3}$ D) $8\dfrac{2}{3}$ E) $16\dfrac{2}{3}$

(10) If a circle's diameter is increased by 25%, then its area is

A) 25% larger. B) 125% larger. C) $\dfrac{5}{4}$ larger. D) 625% larger. E) $\dfrac{25}{16}$ larger.

(11) $9\dfrac{1}{2}$ percent of 24 is the same as 19% of _____

A) 6 B) 48 C) 12 D) 18 E) 16

(12) Mackenzie's class has 10 boys and 14 girls. If her teacher randomly chooses a student to hand out papers, what is the probability that a girl will be chosen?

A) $\dfrac{5}{7}$ B) $\dfrac{7}{10}$ C) $\dfrac{7}{5}$ D) $\dfrac{7}{12}$ E) $\dfrac{5}{12}$

(13) A pizza was cut into 12 equal slices. Eduardo ate one-third of the slices and gave one-half of the remaining slices to friends. How many slices were left?
A) 8   B) 6   C) 5   D) 4   E) 2

(14) 35 base 6 equals _____ base 10?
A) 8   B) 64   C) 11   D) 18   E) 23

For Questions 15 – 18 please use the chart below.

TYPES OF ICE CREAM

- ☐ Vanilla
- ☐ Strawberry
- ☐ Raspberry
- ☐ Chocolate

12% 24% 18% 15%
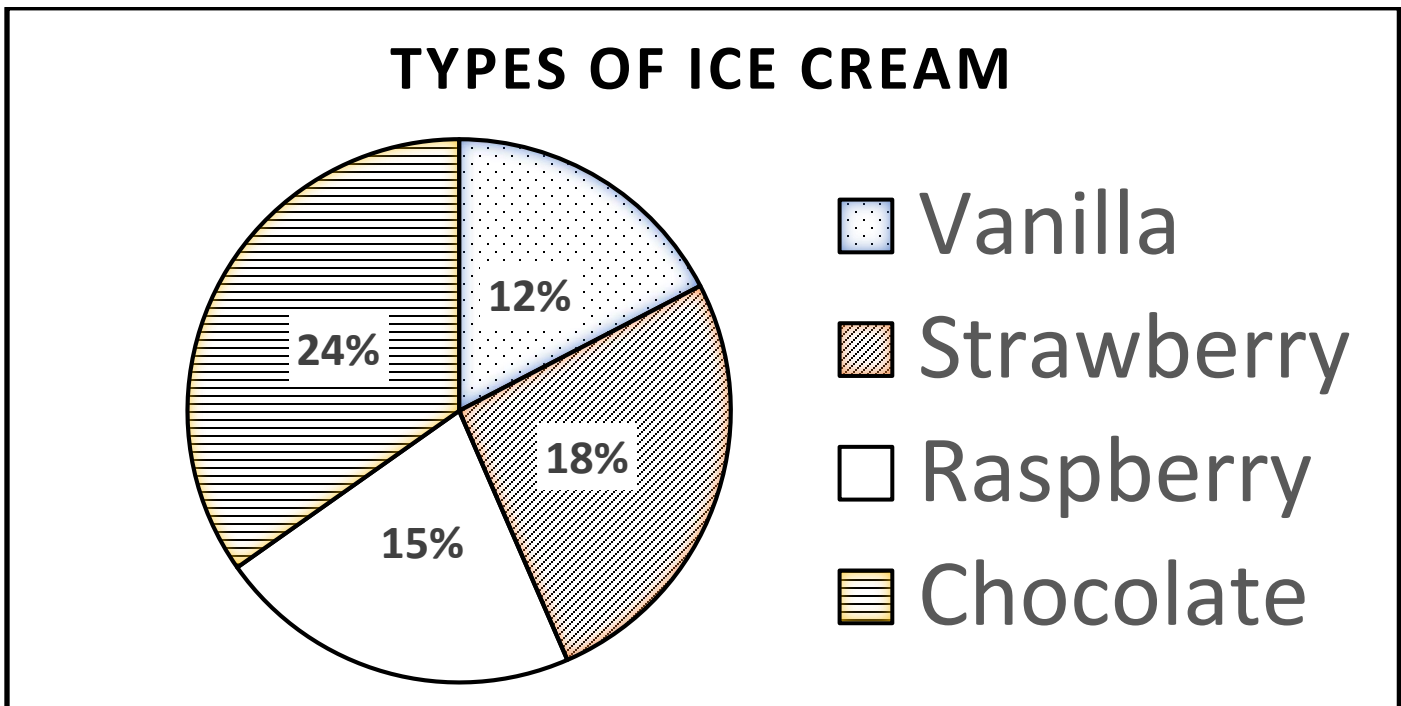
(15) 200 Students answered a survey at Eagle View Elementary on what type of ice cream was their favorite. Using the above chart, how many students liked Strawberry ice cream the best?
A) 18   B) 180   C) 36   D) 72   E) 40

(16) 200 Students answered a survey at Eagle View Elementary on what type of ice cream was their favorite. Using the above chart, how many students liked Raspberry or Vanilla ice creams the best?
A) 54   B) 27   C) 24   D) 30   E) 120

(17) 200 Students answered a survey at Eagle View Elementary on what type of ice cream was their favorite. Using the above chart, how many students did not choose Vanilla ice cream as their favorite?
A) 88   B) 176   C) 98   D) 60   E) 84

(18) 200 Students answered a survey at Eagle View Elementary on what type of ice cream was their favorite. Using the above chart, if the average amount of ice cream eaten that day by each student was 2 ounces, how much chocolate ice cream was eaten?
A) 88 oz.   B) 24 oz.   C) 48 oz.   D) 60 oz.   E) 96 oz.

(19) 28.4 decimeters = _____ centimeters (cm).
A) 0.284 cm   B) 0.00284 cm   C) 2.84 cm   D) 284 cm   E) 2840 cm

(20) Lisha puts dots that are equally spaced apart on a sheet of paper. The dots are 1-inch apart. If there are 13 dots in each of 17 rows, what is the distance from the first dot in the 1st row to the last dot in the 17th row?

A) 400 in. B) 30 in. C) $17\sqrt{13}$ in. D) 28 in. E) 20 in.

(21) Genny draws a single card from a standard deck of 52 playing cards. What is the probability that she draws a red queen?

A) $\dfrac{1}{4}$ B) $\dfrac{1}{26}$ C) $\dfrac{1}{52}$ D) $\dfrac{1}{2}$ E) $\dfrac{1}{13}$

(22) $9\dfrac{1}{3} \times 9\dfrac{2}{3} =$ _____

A) $81\dfrac{2}{3}$ B) $90\dfrac{2}{3}$ C) $81\dfrac{2}{9}$ D) $90\dfrac{1}{9}$ E) None of these

(23) If the area of circle is 36π, what is its circumference?

A) 12π B) 18π C) 6π D) 12 E) 9π

(24) Matt placed 20 bricks on the ground next to each other. He then placed 19 bricks on top of that row. He then placed 18 bricks on the next row above and continued to do so until there was only one brick to the top-most row. How many bricks total did Matt place?

A) 420 B) 400 C) 380 D) 210 E) 200

(25) If $2x - y = 24$ and $x + y = 30$, then $y =$ _____

A) 18 B) 12 C) -18 D) -12 E) -6

(26) If $f(x) = x^2 + 4.6x + 5.29$, then $f(-2) =$ _____

A) 4 B) 18.49 C) 0.09 D) 9.2 E) 0.9

(27) If the shaded area in the figure to the right is 200 square centimeters, what is the perimeter of the square?

A) 20 cm   D) 40 cm

B) 400 cm   E) 80 cm

C) 1200 cm
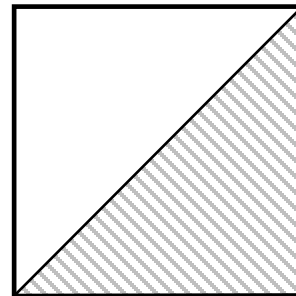
(28) Set A = {P, R, I, M, E}, B = {N, U, M, B, E, R} and C = {U, I, L}. What is the number of unique elements in $A \cup C \cap B$?

A) 4 B) 6 C) 3 D) 5 E) None of these

(29) How many whole numbers will evenly divide into 24?

A) 24 B) 36 C) 8 D) 48 E) 12

(30) $42 \div 16 - 10 \div 16 =$

A) 32 B) 2 C) 8 D) 4 E) 24

(31) 0.06666 . . . = _____ common fraction.

A) $\dfrac{1}{30}$ B) $\dfrac{1}{6}$ C) $\dfrac{2}{15}$ D) $\dfrac{1}{15}$ E) $\dfrac{2}{33}$

(32) Five identical squares, each with area of 36 square inches, are placed so that they each touch each other on a side, forming a rectangle. What is the perimeter of the rectangle?
A) 180 in.   B) 120 in.   C) 72 in.   D) 60 in.   E) 36 in.

(33) $(26 \times 17 + 74) \div 9$ has a remainder of _____
A) 1   B) 3   C) 4   D) 6   E) 8

(34) If you roll a single fair die, what are the odds that the number of dots showing on top is greater than 4?

A) $\dfrac{1}{2}$ B) $\dfrac{1}{6}$ C) $\dfrac{1}{3}$ D) $\dfrac{2}{3}$ E) $\dfrac{2}{1}$

(35) Wes can peel a bushel of potatoes in $1\dfrac{1}{2}$ hours, while Noah can peel a bushel of potatoes in 45 minutes.

If the brothers work together, how long would it take them to peel a bushel of potatoes?

A) $2\dfrac{1}{2}$ hrs.   B) $2\dfrac{1}{4}$ hrs.   C) $\dfrac{1}{2}$ hr.   D) $\dfrac{4}{9}$ hr.   E) $1\dfrac{1}{3}$ hrs.

(36) What is the least common multiple of 24, 18 and 21?
A) 3   B) 72   C) 84   D) 122   E) 504

(37) The time difference, ignoring daylight savings time, between Austin, Texas and Vatican City, Italy is such that Vatican City is seven hours ahead. Los Angeles, California is 2 hours behind Austin. If it is 1:00 PM in Los Angeles, what time is it in the Vatican City?
A) 3:00 AM   B) 9:00 AM   C) 7:00 PM   D) 10:00 PM   E) 11:00 PM

(38) If R_1 and R_2 represents the two answers for the equation $2x^2 - 6x + 15 = 0$, what is $R_1 + R_2$?

A) $7\dfrac{1}{2}$ B) $\dfrac{2}{15}$ C) 3   D) $\dfrac{1}{3}$ E) -3

(39) What is the area of a rhombus with diagonals $12\dfrac{1}{3}$ cm and 6 cm?

A) 37 cm^2 B) 42 cm^2 C) 68 cm^2 D) 74 cm^2 E) 108 cm^2

(40) What is the tenth term in the Fibonacci sequence 1, 1, 2, 3, 5, …?
A) 21   B) 29   C) 34   D) 38   E) 55

(41) A rectangular garden 50 feet long and 10 feet wide is enclosed by a fence. To make the garden larger, while using the same fence, its shape is changed to a square. By how many square feet does this enlarge the garden?
A) 100 feet^2 B) 200 feet^2 C) 300 feet^2 D) 400 feet^2 E) 500 feet^2

(42) $(6 \heartsuit 3) + 4 - (2 - 1) = 5$ if $\heartsuit$ is which math operation?
A) +   B) −   C) ×   D) ÷   E) $\sqrt{\ }$

(43) The third exit on a highway is located at milepost 40 and the tenth exit is at milepost 160. There is a service center on the highway located three-fourths of the way from the third exit to the tenth exit. At what milepost would you expect to find this service center?
A) 90 B) 100 C) 110 D) 120 E) 130

(44) Three flower beds overlap as shown to the right. Bed A has 500 plants, bed B has 450 plants, and bed C has 350 plants. Beds A and B share 50 plants, while beds A and C share 100. What is the total number of plants?
A) 850 D) 1300
B) 1000 E) 1450
C) 1150
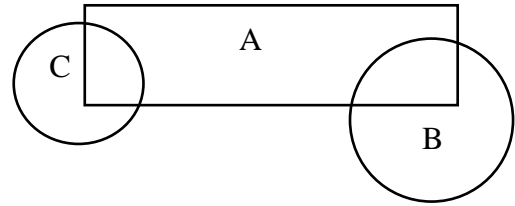
(45) The average age of the 40 members of a computer science camp is 17 years. There are 20 girls, 15 boys, and 5 adults. If the average age of the girls is 15 and the average age of the boys is 16, what is the average age of the adults?
A) 26 B) 27 C) 28 D) 29 E) 30

(46) Soda is sold in packs of 6, 12 and 24 cans. What is the minimum number of packs needed to buy exactly 90 cans of soda?
A) 4 B) 5 C) 6 D) 8 E) 15

(47) 2019^{2020} divided by 5 has a remainder of_____.
A) 0 B) 1 C) 2 D) 3 E) 4

(48) An ape at the Fort Worth Zoo ate 100 bananas from May 1st through May 5th. Each day she ate six more bananas than on the previous day. How many bananas did the ape eat on May 5th?
A) 20 B) 22 C) 30 D) 32 E) 34

(49) How many distinct triangles can be drawn using three of the dots shown to the right as vertices?
A) 9 D) 20
B) 12 E) 24
C) 18
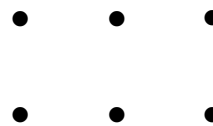
(50) Albert's empty swimming pool will hold 24,000 gallons of water when full. The pool will be filled by 4 hoses, each of which supplies 2.5 gallons of water per minute. How many hours will it take to fill the pool?
A) 40 B) 42 C) 44 D) 46 E) 48

2018 – 2019 University Interscholastic League JH/MS Mathematics Contest A – Key

(1)	B		(26)	C
(2)	A		(27)	E
(3)	E		(28)	A
(4)	D		(29)	C
(5)	C		(30)	B
(6)	D		(31)	D
(7)	D		(32)	C
(8)	A		(33)	B
(9)	B		(34)	A
(10)	E		(35)	C
(11)	C		(36)	E
(12)	D		(37)	D
(13)	D		(38)	C
(14)	E		(39)	A
(15)	C		(40)	E
(16)	A		(41)	D
(17)	B		(42)	D
(18)	E		(43)	E
(19)	D		(44)	C
(20)	E		(45)	C
(21)	B		(46)	B
(22)	E (90 2/9)		(47)	B
(23)	A		(48)	D
(24)	D		(49)	C
(25)	B		(50)	A

FALL/WINTER DISTRICT 2018-2019
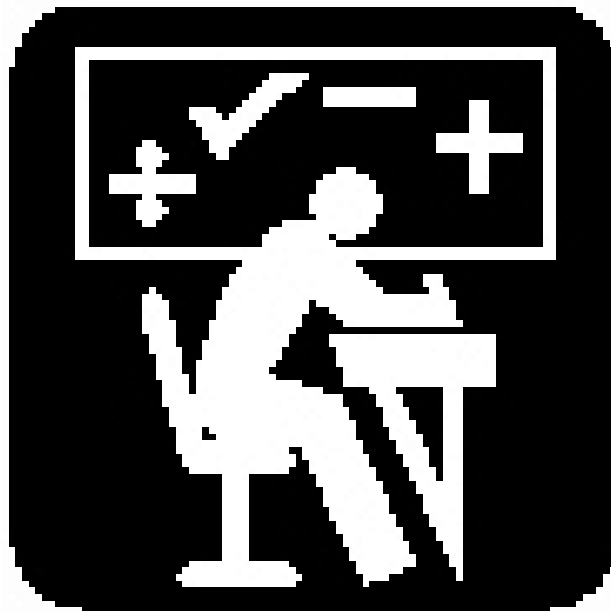
A+ ACADEMICS

University Interscholastic League

Mathematics

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

2018 – 2019 University Interscholastic League JH/MS Mathematics Contest B

(1) Evaluate: $\left(\dfrac{1}{4}\right)^{-2} \div 2 - 4^0$

 A) 7 B) 8 C) $\dfrac{1}{32}$ D) $\dfrac{1}{8}$ E) -8

(2) Forty-eight nickels plus nine quarters = _____ .

 A) $2.40 B) $2.25 C) 46 dimes D) $4.56 E) $46\dfrac{1}{2}$ dimes

(3) $9 \times \dfrac{10}{11} =$ _____ .

 A) $9\dfrac{2}{11}$ B) $8\dfrac{2}{11}$ C) $\dfrac{9}{11}$ D) $10\dfrac{8}{11}$ E) $9\dfrac{8}{11}$

(4) $44\dfrac{4}{9}\% =$ _____ .

 A) $\dfrac{4}{11}$ B) $\dfrac{8}{9}$ C) $\dfrac{4}{9}$ D) $\dfrac{9}{11}$ E) $\dfrac{9}{44}$

(5) 88 feet/second = _____ miles per hour (mph).

 A) $129\dfrac{1}{3}$ mph B) 44 mph C) 120 mph D) 60 mph E) 132 mph

(6) If $1°C = \dfrac{5}{9}(1°F - 32)$, then $60°C =$ _____ .

 A) 140°F B) $15\dfrac{5}{9}$°F C) 92°F D) $50\dfrac{2}{5}$°F E) None of these

(7) $\dfrac{3}{16} =$ ____ %

 A) $18\dfrac{1}{4}$ B) $18\dfrac{3}{4}$ C) $53\dfrac{1}{4}$ D) $53\dfrac{1}{3}$ E) $6\dfrac{3}{4}$

(8) 2.2 is what percent of 20?

 A) 110 B) 1.1 C) 11 D) $9\dfrac{1}{11}$ E) $9\dfrac{1}{9}$

(9) If four pencils cost $1.20, then six pencils cost _____ .
 A) $1.80 B) 90¢ C) $2.08 D) $1.50 E) $1.60

(10) What is the arithmetic mean of 36, 22, 34 and 20?
 A) 27 B) 28 C) 29 D) 26 E) 25

(11) Which of those listed below is a triangular number?
 A) 16 B) 18 C) 21 D) 27 E) 33

(12) If $48^2 - 42^2 = 12k$, then k is equal to what value?

     A) 45   B) 6   C) 12   C) 64   E) 90

(13) If $A > 1$ and $A^k \div A^2 \times A = A^4$, then k has what value?

     A) 9   B) 8   C) 7   D) 6   E) None of these

(14) If $y = 19$ and $x = 13$, then what does $x^2 - 2xy + y^2$ equal?

     A) 6   B) -36   C) 18   D) 6   E) 36

For questions 15 – 18, please use the graph below.

Fundraiser Tickets Sold
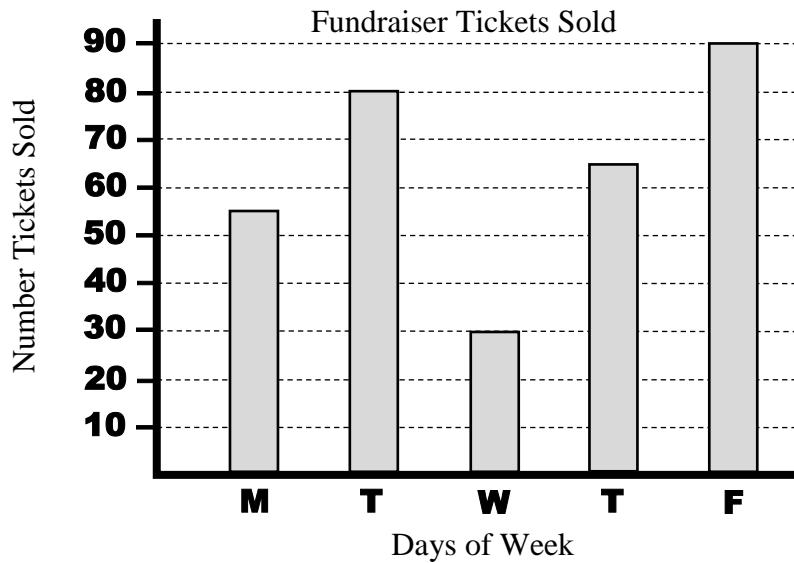
(15) If tickets were $2 each, how much more money was made in ticket sales for the most daily ticket sales compared to the least daily ticket sales?

     A) $90   B) $60   C) $120   D) $50   E) $70

(16) What is the range for the number of tickets sold over the five-day period?

     A) 60 tickets   B) 64 tickets   C) 65 tickets   D) 320 tickets   E) 160 tickets

(17) If ticket were $2 each, how much money was made in ticket sales for the five-day period?

     A) $320   B) $160   C) $128   D) $130   E) $640

(18) What is the positive difference in the arithmetic mean and median for the total number of tickets sold over the five-day period?

     A) 65 tickets   B) 64 tickets   C) 139 tickets   D) 1 ticket   E) zero tickets

(19) Find n, so that $917n$ is the largest four-digit number divisible by six.

     A) 2   B) 4   C) 6   D) 8   E) 0

(20) $24 \div 0.08333 \ldots =$ _____.

     A) 1   B) 144   C) 288   D) 48   E) 2

(21) $\sqrt{29 \times 31 + 1}$ = _____.

    A) 31   B) 32   C) 33   D) 34   E) None of these

(22) How much does it cost to drive a car 90 miles at twenty-five cents per mile?

    A) $22.50   B) $36   C) $29.25   D) $225   E) $27.78

(23) What is the simple interest on $120 at 6% annual for three months?

    A) $18   B) $7.20   C) $3.60   D) $1.80   E) None of these

(24) Four cups equal ____ liquid ounces.

    A) 16   B) 32   C) 36   D) 48   E) 96

(25) If the sum of three consecutive even integers is 132, what is the largest integer?

    A) 42   B) 44   C) 46   D) 48   E) 52

(26) A black bag contains 2 blue marbles, 1 red marble, 4 green marbles, 5 yellow marbles and 3 black marbles. All marbles are of identical size and weight. If Mackenzie reaches in and picks a single marble that is not blue, what is the probability that on the next try she pulls out a blue marble?

    A) $\dfrac{2}{15}$ B) $\dfrac{1}{5}$ C) $\dfrac{1}{3}$ D) $\dfrac{4}{15}$ E) $\dfrac{1}{7}$

(27) Noah opens his bible to a random location and notices the product of the two page-numbers is 380. What is the sum of the two page-numbers that Noah turned to?

    A) 39   B) 40   C) 37   D) 38   E) 48

(28) What is the slope of the straight line passing through the points (-2, 6) and (4, -10)?

    A) $\dfrac{8}{3}$ B) $\dfrac{3}{8}$ C) $\dfrac{2}{1}$ D) $-\dfrac{1}{2}$ E) $-\dfrac{8}{3}$

(29) If $x + y = 6$ and $xy = 8$, then $x^2 + y^2$ = _____.

    A) 36   B) 28   C) 14   D) 20   E) 24

(30) At one ticket window 9 adult tickets and 8 child tickets were sold for a total of $69. At another ticket window, 4 adult and 12 child tickets were sold for a total of $56. If two parents and their one child bought tickets, how much would they pay total?

    A) $13   B) $11   C) $16   D) $18   E) $9

(31) Two sides of a triangle measure 18 cm and 36 cm. What is the smallest possible integral length of the third side of the triangle?

    A) 18 cm   B) 19 cm   C) 17 cm   D) 54 cm   E) 55 cm

(32) How many positive integral divisors does the number 40 have?

    A) 40   B) 200   C) 16   D) 8   E) 4

(33) Genny walked 12 feet due West and then stopped. She then turned North and walked 16 feet and stopped. To the nearest foot, how far away was Genny from her starting point?

    A) 28 feet   B) 4 feet   C) 112 feet   D) 400 feet   E) 20 feet

(34) When it is midnight in Vatican City, Italy, it is 6:00 PM the previous day in Fairfax, Virginia; 3:00 PM in San Francisco, California; and 5:00 PM in Houston Texas. If it is 8:00 AM in San Francisco, California, what time is it in the Fairfax, Virginia?

A) 5:00 AM same day
B) 1:00 AM same day
C) 3:00 PM same day
D) 3:00 AM same day
E) 11:00 AM same day

(35) In the figure to the right, the square has an area of 64 cm² and is one-third the area of rectangle ABCD. What is the perimeter of rectangle ABCD?
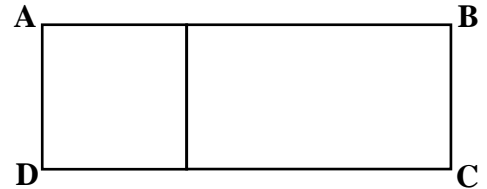
A) 192 cm
B) 96 cm
C) 80 cm
D) 64 cm
E) 32 cm

(36) Genny can vacuum four rooms of the home in 30 minutes. Andy takes 45 minutes to vacuum the same four rooms. If they work together, how long would it take them to vacuum the four rooms?
A) 16 minutes   B) 18 minutes   C) 24 minutes   D) 28 minutes   E) 36 minutes

(37) What is the x-intercept of the graph of the linear function: $f(x) = \dfrac{3}{8}x - 24$?

A) $(-\dfrac{1}{24}, 0)$ B) (24, 0)   C) (64, 0)   D) (-9, 0)   E) (9, 0)

(38) Thirty-three minutes is what percent of an hour?

A) 33   B) $33\dfrac{1}{3}$ C) 55   D) 45   E) $30\dfrac{1}{3}$

(39) If set A = {D, E, L, R, I, O}, set B = {T, E, X, A, S} and set C = {R, I, O, G, R, A, N, D, E}, then A∪B∩C has how many unique elements?

A) 3   B) 4   C) 5   D) 6   E) 8

(40) Noah, who is 2 feet 6 inches tall casts a shadow that is 4 feet long when Mackenzie casts a shadow that is 6 feet long. How tall is Mackenzie?
A) 3 ft 8 in.   B) 3 ft. 9 in.   C) 4 ft. 3 in.   D) 4 ft. 8 in.   E) 4 ft. 9 in.

(41) If the angles of a triangle are in the ratio 2, 4, 6, what is the sum of the measures of the two largest angles?
A) 30°   B) 60°   C) 72°   D) 90°   E) 150°

(42) How many ways are there to make change for a quarter using only pennies and/or nickels?
A) 4   B) 6   C) 10   D) 15   E) 25

(43) Wesley's school has 1400 students. If the teacher-student ratio is 1:35, how many additional teachers will have to be hired to change the ratio to 1:20?
A) 30   B) 40   C) 55   D) 70   E) 110

(44) If A ♥ B = B^A, then 2♥3 = ___.
A) 6   B) 9   C) 8   D) 12   E) 24

(45) Using all the letters in the word, TEXAS, how many arrangements are possible?
      A) 1   B) 5   C) 20   D) 24   E) 120

(46) How many people can be seated at 12 square tables lined up end to end if each table used individually
      seats four persons?
      A) 24   B) 26   C) 28   D) 36   E) 48

(47) What is the product of the least common multiple and greatest common divisor of 24 and 18?
      A) 42   B) 72   C) 84   D) 432   E) 540

(48) What is the volume of a right cylinder with diameter 8 centimeters (cm) and length 10 cm?
      A) 80π cm^3 B) 160π cm^3 C) 180π cm^3 D) 200π cm^3 E) 640π cm^3

(49) The figure shown to the right is made of two squares,
      labeled A and B, and two congruent rectangles,
      labeled R. The area of square A is 9 square units and
      the area of square B is 16 square units. What is the
      sum of the areas of the two rectangles?
      A) 24 square units
      B) 25 square units
      C) 28 square units
      D) 49 square units
      E) 50 square units

B	R
R	A

(50) Mike received a birthday gift of money. He loaned $5 to his friend Dan and spent half of the remaining
      money. The next day he received $10 from his uncle. After spending $9 at the movies, he still had
      $11.00 left. How much money did Mike receive for his birthday?
      A) $15   B) $16   C) $20   D) $25   E) $35
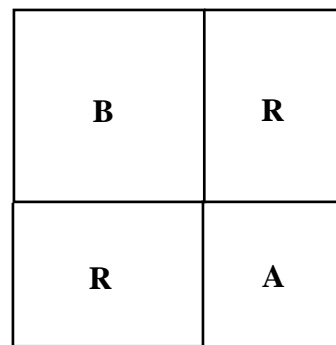
2018 – 2019 University Interscholastic League JH/MS Mathematics Contest B – Key

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

SPRING DISTRICT 2018-2019

A+ ACADEMICS

University Interscholastic League

Mathematics

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

2018 – 2019 University Interscholastic League JH/MS Mathematics Contest C

(1) Evaluate: $\left(\dfrac{1}{3}\right)^{-2} \div 3 - 3^0$

    A) 2   B) 3   C) $\dfrac{1}{27}$ D) $\dfrac{26}{27}$ E) -3

(2) Forty-four nickels plus eight quarters = _____.

    A) $2.20   B) $2.00   C) 42 dimes   D) $4.02   E) $42\dfrac{1}{5}$ dimes

(3) $8 \times \dfrac{10}{12} =$ _____.

    A) $9\dfrac{2}{3}$ B) $8\dfrac{5}{6}$ C) $\dfrac{2}{3}$ D) $7\dfrac{5}{6}$ E) $6\dfrac{2}{3}$

(4) $63\dfrac{7}{11}\% =$ _____.

    A) $\dfrac{6}{11}$ B) $\dfrac{63}{11}$ C) $\dfrac{7}{11}$ D) $\dfrac{11}{63}$ E) $\dfrac{7}{9}$

(5) 22 feet/second = _____ miles per hour (mph).

    A) $32\dfrac{4}{15}$ mph   B) 15 mph   C) 32 mph   D) 66 mph   E) 132 mph

(6) If $1°C = \dfrac{5}{9}\left(1°F - 32\right)$, then $40°C =$ _____.

    A) 104°F   B) $44\dfrac{4}{9}$ °F   C) 140°F   D) $40\dfrac{4}{9}$ °F   E) None of these

(7) $\dfrac{5}{16} =$ _____%

    A) $31\dfrac{1}{5}$ B) $31\dfrac{3}{4}$ C) $3\dfrac{1}{5}$ D) $3\dfrac{1}{8}$ E) $31\dfrac{1}{4}$

(8) 3.2 is what percent of 20?

    A) 64   B) 1.6   C) 16   D) $6\dfrac{1}{4}$ E) $9\dfrac{16}{25}$

(9) If four pens cost $3.20, then six pencils cost _____.
    A) $6.80   B) 80¢   C) $5.33   D) $4.80   E) $1.92

(10) What is the arithmetic mean of 16, 22, 34 and 20?
    A) 21   B) 22   C) 23   D) 24   E) 25

(11) Which of those listed below is a triangular number?
    A) 15   B) 16   C) 18   D) 20   E) 33

(12) If $48^2 - 42^2 = 3k$, then k is equal to what value?

A) 180   B) 36   C) 360   C) 60   E) 90

(13) If $A > 1$ and $A^k \div A^2 \times A = A^5$, then k has what value?

A) 9   B) 8   C) 7   D) 6   E) None of these

(14) If $y = 18$ and $x = 12$, then what does $x^2 - 2xy + y^2$ equal?

A) 6   B) -36   C) 18   D) -6   E) 36

For questions 15 – 18, please use the graph below.

Fundraiser Tickets Sold
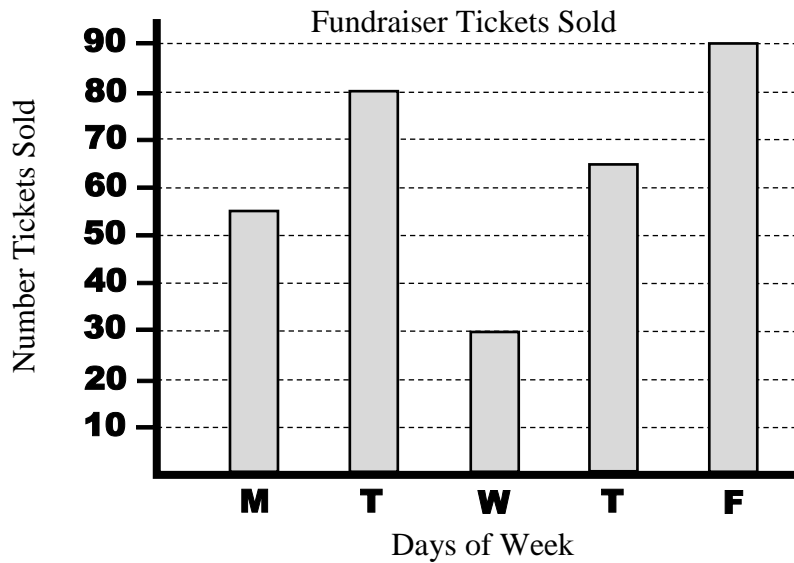
(15) If tickets were $3 each, how much more money was made in ticket sales for the most daily ticket sales compared to the least daily ticket sales?

A) $180   B) $60   C) $120   D) $90   E) $70

(16) What is the range for the number of tickets sold over the five-day period?

A) 60 tickets   B) 64 tickets   C) 65 tickets   D) 320 tickets   E) 160 tickets

(17) If tickets were $3 each, how much money was made in ticket sales for the five-day period?

A) $320   B) $960   C) $160   D) $480   E) $640

(18) What is the positive difference in the arithmetic mean and median for the total number of tickets sold over the five-day period?

A) 65 tickets   B) 64 tickets   C) 139 tickets   D) 1 ticket   E) zero tickets

(19) Find n, so that $832n$ is the largest four-digit number divisible by six.

A) 2   B) 4   C) 6   D) 8   E) 0

(20) $36 \div 0.08333\ldots =$ _____.

A) 3   B) 30   C) 288   D) 24   E) 432

(21) $\sqrt{28 \times 32 + 4}$ = _____.

  A) 31   B) 32   C) 33   D) 34   E) None of these

(22) How much does it cost to drive a car 120 miles at twenty-five cents per mile?
  A) $48   B) $36   C) $30   D) $300   E) $480

(23) What is the annual simple interest on $120 at 6% for four months?
  A) $2.40   B) $7.20   C) $3.60   D) $1.80   E) None of these

(24) Six cups equal ____ liquid ounces.
  A) 16   B) 32   C) 36   D) 48   E) 96

(25) If the sum of three consecutive even integers is 102, what is the largest integer?
  A) 32   B) 34   C) 36   D) 38   E) 42

(26) A black bag contains 2 blue marbles, 1 red marble, 4 green marbles, 5 yellow marbles and 3 black marbles. All marbles are of identical size and weight. If Mackenzie reaches in and picks a single marble that is not green, what is the probability that on the next try she pulls out a green marble?

  A) $\dfrac{4}{5}$ B) $\dfrac{1}{5}$ C) $\dfrac{1}{3}$ D) $\dfrac{4}{15}$ E) $\dfrac{2}{7}$

(27) Noah opens his bible to a random location and notices the product of the two page-numbers is 702. What is the sum of the two page-numbers that Noah turned to?
  A) 54   B) 53   C) 51   D) 49   E) 48

(28) What is the slope of the straight line passing through the points (0, 6) and (6, -10)?

  A) $\dfrac{8}{3}$ B) $\dfrac{3}{8}$ C) $\dfrac{2}{1}$ D) $-\dfrac{1}{2}$ E) $-\dfrac{8}{3}$

(29) If $x + y = 7$ and $xy = 12$, then $x^2 + y^2 =$ _____.
  A) 50   B) 25   C) 24   D) 20   E) 18

(30) At one ticket window, 10 adult tickets and 8 child tickets were sold for a total of $92. At another ticket window, 5 adult and 12 child tickets were sold for a total of $78. If two parents and their one child bought tickets, how much would they pay total?
  A) $13   B) $11   C) $16   D) $18   E) $9

(31) Two sides of a triangle measure 20 cm and 36 cm. What is the smallest possible integral length of the third side of the triangle?
  A) 17 cm   B) 18 cm   C) 19 cm   D) 54 cm   E) 56 cm

(32) How many positive integral divisors does the number 36 have?
  A) 36   B) 1296   C) 9   D) 18   E) 24

(33) Genny walked 24 feet due West and then stopped. She then turned North and walked 10 feet and stopped. To the nearest foot, how far away was Genny from her starting point?
  A) 34 feet   B) 26 feet   C) 240 feet   D) 676 feet   E) 25 feet

(34) When it is midnight in Vatican City, Italy, it is 6:00 PM the previous day in Fairfax, Virginia; 3:00 PM in San Francisco, California; and 5:00 PM in Houston Texas. If it is 9:00 AM in San Francisco, California, what time is it in the Fairfax, Virginia?
A) 5:00 AM same day
B) 12:00 AM same day
C) 3:00 PM same day
D) 3:00 AM same day
E) 12:00 PM same day

(35) In the figure to the right, the square has an area of 81 cm² and is one-third the area of rectangle ABCD. What is the perimeter of rectangle ABCD?
A) 90 cm
B) 72 cm
C) 63 cm
D) 54 cm
E) 27 cm
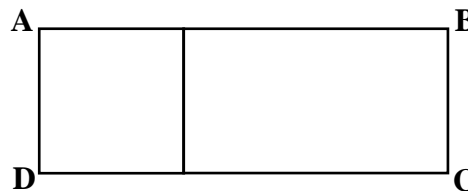
(36) Genny can vacuum four rooms of the home in 24 minutes. Andy takes 48 minutes to vacuum the same four rooms. If they work together, how long would it take them to vacuum the four rooms?
A) 16 minutes   B) 18 minutes   C) 24 minutes   D) 28 minutes   E) 36 minutes

(37) What is the x-intercept of the graph of the linear function: $f(x) = \dfrac{3}{8}x - 18$?

A) $(-\dfrac{1}{24}, 0)$ B) (24, 0)   C) (64, 0)   D) (48, 0)   E) (6, 0)

(38) Twenty-seven minutes is what percent of an hour?

A) 9   B) $33\dfrac{1}{3}$ C) 48   D) 45   E) $22\dfrac{2}{9}$

(39) If set A = {A, U, S, T, I, N}, set B = {T, E, X, A, S} and set C = {T, R, A, V, I, S}, then A∪B∩C has how many unique elements?
A) 3   B) 4   C) 5   D) 6   E) 8

(40) Noah, who is 2 feet 6 inches tall casts a shadow that is 6 feet long when Mackenzie casts a shadow that is 10 feet long. How tall is Mackenzie?
A) 5 ft 8 in.   B) 5 ft. 2 in.   C) 4 ft. 8 in.   D) 4 ft. 4 in.   E) 4 ft. 2 in.

(41) If the angles of a triangle are in the ratio 2:3:5, what is the sum of the measures of the two largest angles?
A) 90°   B) 120°   C) 126°   D) 144°   E) 154°

(42) How many ways are there to make change for a quarter using only dimes and or pennies?
A) 4   B) 3   C) 10   D) 15   E) 25

(43) Wesley's school has 1400 students. If the teacher-student ratio is 1:35, how many additional teachers will have to be hired to change the ratio to 1:25?
A) 56   B) 40   C) 26   D) 20   E) 16

(44) If A ♥ B = B^A, then 3♥4 = ___.
A) 64   B) 12   C) 81   D) 27   E) 24

(45) Using all the letters in the word, AUSTIN, how many arrangements are possible?
A) 1   B) 6   C) 36   D) 360   E) 720

(46) How many people can be seated at 16 square tables lined up end to end if each table used individually seats four persons?
A) 34   B) 36   C) 56   D) 64   E) 128

(47) What is the product of the least common multiple and greatest common divisor of 16 and 24?
A) 384   B) 192   C) 96   D) 90   E) 54

(48) What is the volume of a right cylinder with diameter 12 centimeters (cm) and length 10 cm?
A) 90π cm^3 B) 24π cm^3 C) 144π cm^3 D) 360π cm^3 E) 480π cm^3

(49) The figure shown to the right is made of two squares, labeled A and B, and two congruent rectangles, labeled R. The area of square A is 16 square units and the area of square B is 25 square units. What is the sum of the areas of the two rectangles?
A) 20 square units
B) 16 square units
C) 25 square units
D) 40 square units
E) 54 square units
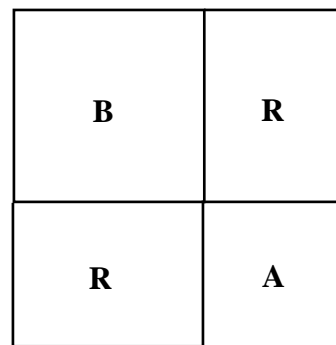
B	R
R	A

(50) Mike received a birthday gift of money. He loaned $5 to his friend Dan and spent half of the remaining money. The next day he received $10 from his uncle. After spending $9 at the movies, he still had $16.00 left. How much money did Mike receive for his birthday?
A) $15   B) $16   C) $20   D) $25   E) $35

2018 – 2019 University Interscholastic League JH/MS Mathematics Contest C – Key

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

Contestant's Number _____

Final _____   _____
2nd _____   _____
1st _____   _____
Score   Initials

Read Directions Carefully   **Do Not Unfold This Sheet**
Before Beginning Test   **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!

(1) $218 - 39 =$ _____

(2) $29 + 28 =$ _____

(3) $321 - 123 =$ _____

(4) $8 \times 32 =$ _____

(5) $11 \times 45 =$ _____

(6) $\dfrac{1}{8} + \dfrac{5}{8} =$ _____(common fraction)

(7) $2.07 + 4.03 =$ _____(decimal)

(8) $3.25 \times 4 =$ _____

(9) $404 \times 25 =$ _____

*(10) $167 \times 359 + 7 =$ _____

(11) $21^2 =$ _____

(12) $\dfrac{5}{6} - \dfrac{5}{8} =$ _____ (common fraction)

(13)   MDLX = _____ (Arabic numeral)

(14) $12 \times 21 =$ _____

(15) $\dfrac{8}{9} \times \dfrac{9}{10} =$ _____

(16)   The median of 9, 20, 16, and 12 is _____

(17) $17 \times 38 - 38 \times 6 =$ _____

(18)   Which is smaller, $\dfrac{5}{8}$ or 0.601? _____

(19) $14 + 17 + 20 + 23 + 26 =$ _____

*(20) $239 \times 749 - 211 =$ _____

(21) $96 \times 93 =$ _____

(22) $24 + 16 \div (-2^3) =$ _____

(23) $39 \times 13 =$ _____

(24) $4 \times \dfrac{5}{6} =$ _____ (mixed number)

(25)   If 16 pencils cost $1.76 then 12 pencils cost $ _____

(26)   12 hours = _____minutes

(27) $15 \times 44 =$ _____

(28)   If $3x + 23 = 35$ then $x =$ _____

(29) $2\dfrac{1}{3}$ square yards = _____square feet

*(30) $1111 \times 819 =$ _____

(31) $3^4 =$ _____

(32)   What is the largest prime number less than 70? _____

(33) $444 \times 75 =$ _____

(34)   The least common multiple of 24 and 18 is _____

(35)   If 8 is to 15 as 16 is to n, n = _____

(36)   If $f(x) = 12 - 5x$, then $f(-3) =$ _____

(37)   What is the sum of positive integers that divide evenly into 12? _____

(38)   If the area of a circle 144π, then the circumference of this circle is $k\pi$. What is k? _____

(39)   If $\dfrac{1}{2} - \dfrac{1}{x} = \dfrac{3}{10}$, $x =$ _____

*(40) $2045 - 555 \times 999 =$ _____

(41) If set A = {A, U, S, T, I, N} and B = {T, E, X, A, S}, then A ∩ B has how many elements? _____

(42) $14 \times 429 =$ _____

(43) 73201 ÷ 11 has a remainder of _____

(44) What is the area of a parallelogram with base, $2\frac{1}{4}$ and height $6\frac{1}{4}$? _____

(45) 12 gallons = _____quarts

(46) 213 base 4 = _____base 10

(47) What is the surface area of a rectangular box with edges 12, 5 and 8? _____

(48) If $6 - 3x \le 21$, then $x \ge$ _____

(49) If a number plus 3 times itself is 48, then what is the number? _____

*(50) $250\% \times 1088 =$ _____

(51) 232 base 6 + 145 base 6 = _____base 6

(52) Three and one-eighth = _____ %

(53) $4\frac{3}{4} - 1\frac{5}{6} =$ _____(mixed number)

(54) The measure of the interior angle of a regular pentagon is _____degrees

(55) $111 \times 829 =$ _____

(56) What is the length of the hypotenuse for a right triangle with legs that measure 8 and 15? _____

(57) $\frac{1}{6} + \frac{1}{3} - \frac{1}{9} =$ _____

(58) For the sequence: 2, 3, 5, 8, 12, . . ., k, 30, … $k =$ ___

(59) $\frac{2 + 4 + 6 + ... + 12}{6} =$ _____

*(60) $124\frac{1}{4} \times 125\frac{3}{4} =$ _____

(61) What is the probability of drawing a red king from a standard deck of playing cards? _____

(62) $5! + 4! \times 3! =$ _____

(63) $(319^2 \times 322) \div 4$ has a remainder of _____

(64) $\sqrt{92416} =$ _____

(65) The volume of a right cylinder with diameter 12 and length 11 is $k\pi$, and $k =$ _____

(66) The coordinates for the midpoint between (4, 2) and (6, -8) are (a, b). What is b? _____

(67) If 18 % of $4\frac{1}{4}$ is $4\frac{1}{2}$ % of n, then n = _____

(68) $\sqrt{361} - \sqrt{484} =$ _____

(69) $1 + 3 + 5 + . . . + 41 =$ _____

*(70) $28 \times 30 \times 32 =$ _____

(71) $2^5 + 3^4 + 4^3 =$ _____

(72) If the odds of an event successfully happening are 8 to 6, then the probability of that event happening is _____

(73) 0.1666 . . . + 0.08333 . . = _____(common fraction)

(74) $1.01 \times 1.5 =$ _____(decimal)

(75) 25% of 44 less 44 is _____

(76) If 144 is the volume of a rectangular box with edges 8, 6 and n, what is n? _____

(77) $45^2 + 15^2 =$ _____

(78) If 36π is the volume of a sphere, then its radius is _____

(79) $17^2 - 28^2 =$ _____

*(80) $833 \times 2404 =$ _____

2018 – 2019 University Interscholastic League Junior High Number Sense Test A – Key

(1) 179

(2) 57

(3) 198

(4) 256

(5) 495

(6) $\dfrac{3}{4}$

(7) 6.1

(8) 13

(9) 10100

*(10) 56962 – 62958

(11) 441

(12) $\dfrac{5}{24}$

(13) 1560

(14) 252

(15) $\dfrac{4}{5}$; .8

(16) 14

(17) 418

(18) .601

(19) 100

*(20) 169860 – 187740

(21) 8928

(22) 22

(23) 507

(24) $3\dfrac{1}{3}$

(25) 1.32

(26) 720

(27) 660

(28) 4

(29) 21

*(30) 864414 – 955404

(31) 81

(32) 67

(33) 33300

(34) 72

(35) 30

(36) 27

(37) 28

(38) 24

(39) 5

*(40) -580020 – -524780

(41) 3

(42) 6006

(43) 7

(44) $14\dfrac{1}{16}$; $\dfrac{225}{16}$; or 14.0625

(45) 48

(46) 39

(47) 392

(48) -5

(49) 12

*(50) 2584 – 2856

(51) 421

(52) 312.5; $312\dfrac{1}{2}$; or $\dfrac{625}{2}$

(53) $2\dfrac{11}{12}$

(54) 108

(55) 92019

(56) 17

(57) $\dfrac{7}{18}$

(58) 23

(59) 7

*(60) 14844 – 16405

(61) $\dfrac{1}{26}$

(62) 264

(63) 2

(64) 304

(65) 396

(66) -3

(67) 17

(68) -3

(69) 441

*(70) 25536 – 28224

(71) 177

(72) $\dfrac{4}{7}$

(73) $\dfrac{1}{4}$

(74) 1.515

(75) -33

(76) 3

(77) 2250

(78) 3

(79) -495

*(80) 1902406 – 2102658

Note: *(Number) x – y means an integer between x and y inclusive.
If an answer is of the type like 2/3 it cannot be written as .666… or $.\overline{6}$.

Contestant's Number _____

Final _____   _____
2nd _____   _____
1st _____   _____
Score   Initials

Read Directions Carefully   **Do Not Unfold This Sheet**
Before Beginning Test   **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!

(1) $82 - 28 =$ _____

(2) $219 + 218 =$ _____

(3) $6 \times 16 =$ _____

(4) $918 \div 9 =$ _____

(5) $\dfrac{1}{8} + \dfrac{3}{8} =$ _____(common fraction)

(6) $3.5 \times 6 =$ _____

(7) $4.13 - 1.23 =$ _____ (decimal)

(8) $0.125 \div 5 =$ _____(decimal)

(9) $50 \times 303 =$ _____

*(10) $667 \times 299 + 7 =$ _____

(11) $14^2 =$ _____

(12) $\dfrac{5}{6} \div \dfrac{2}{3} =$ _____

(13) $23 \times 27 =$ _____

(14) MMXVIII = _____(Arabic numeral)

(15) $\dfrac{5}{4} \times \dfrac{8}{15} =$ _____

(16) The mean of 14, 20, 15, and 11 is_____

(17) $11 + 17 + 23 + 29 =$ _____

(18) Which is larger, $\dfrac{11}{16}$ or $\dfrac{9}{13}$? _____

(19) $14 \div 5 + 16 \div 5 =$ _____

*(20) $143 \times 491 - 13 =$ _____

(21) 370 millimeters = _____meters

(22) 4 square yards =_____square feet

(23) $201 \div 6 =$ _____

(24) $6 \times \dfrac{7}{8} =$ _____ (mixed number)

(25) $97 \times 96 =$ _____

(26) 9 days = _____hours

(27) $66 \times 1.5 =$ _____

(28) If 14 ♥'s cost \$1.96, then 10 ♥'s cost \$ _____

(29) $8\dfrac{1}{4} \div \dfrac{1}{4} =$ _____

*(30) $501 \times 481 - 1 =$ _____

(31) $\sqrt[3]{125} =$ _____

(32) If $15 - 3x = 18$, $x =$ _____

(33) The greatest common divisor of 24 and 36 is_____

(34) $2100 \div 75 =$ _____

(35) If $f(x) = 14 + 6x$, then $f(-3) =$ _____

(36) If 14 is to 10 as 7 is to **n**, then **n** = _____

(37) 28 has how many whole number divisors?_____

(38) If the circumference of a circle is 36π, then the area of this circle is **k**π. What is **k**?_____

(39) If $\dfrac{4}{5} + \dfrac{1}{x} = \dfrac{3}{10}$, $x =$_____

*(40) $201 \times 49 + 51 \times 199 =$ _____

(41) If set A = {L, U, B, B, O, C, K} and
B = {C, O, U, N, T, Y}, then A $\cup$ B has how many
elements? _____

(42) $83471 \div 9$ has a remainder of _____

(43) $640 \times 125 =$ _____

(44) What is the perimeter of a rhombus with side $2\frac{1}{4}$?
_____

(45) 41 base 10 = _____ base 6

(46) If $8 + 3x \geq 35$, then $x \geq$ _____

(47) What is the sum-total number of degrees in the
interior of a regular pentagon? _____ °

(48) The surface area of a cube with edge 8 is _____

(49) If a number minus 4 times itself is 24, then what is
the number? _____

*(50) $444\frac{4}{9}\% \times 2690 =$ _____

(51) 232 base 6 – 45 base 6 = _____ base 6

(52) $529 \times 111 =$ _____

(53) $7\frac{5}{8} + 6\frac{5}{6} =$ _____ (mixed number)

(54) What is k in the sequence: 2, 5, 10, k, 26, . . ?
_____

(55) $\sqrt{96100} =$ _____

(56) What is the length of a side for a right triangle with
hypotenuse 50, and other leg 48? _____

(57) $\frac{7}{8} + \frac{6}{8} + \frac{5}{8} + \ldots + \frac{1}{8} =$ _____

(58) The number of unique edges for a square pyramid is
_____

(59) $\dfrac{2+4+6+\ldots+12}{1+2+3+\ldots+12} =$ _____

*(60) $78\frac{1}{3} \times 79\frac{2}{3} =$ _____

(61) What are the odds of drawing a red queen from a
standard deck of playing cards? _____

(62) $5! \div 4! \times 3! =$ _____

(63) $(67^2 \times 518) \div 5$ has a remainder of _____

(64) $0.2666 \ldots =$ _____ (common fraction)

(65) A hamburger patty with thickness 2 cm and diameter
10 cm has a volume of is $k\pi$, and k _____ cm^3

(66) The coordinates for the midpoint between (6, -2) and
(a, b) are (-4, -10). What is a? _____

(67) If $8\frac{1}{2}$ % of 32 is 4 % of n, then n = _____

(68) $\sqrt{289} + \sqrt{625} =$ _____

(69) $39^2 + 13^2 =$ _____

*(70) $41^4 =$ _____

(71) $2^5 \div 4^3 + 2^{-1} =$ _____

(72) If the probability of an event happening is $\frac{5}{6}$, what
are the odds that the event will happen? _____

(73) $0.333 \ldots + 0.0833 \ldots =$ _____ (common fraction)

(74) $101 \times 125 =$ _____

(75) 24 more than 75% of 24 is _____

(76) The sum of positive integral factors of 12 is _____

(77) $8 \times 13 \times 25 =$ _____

(78) Five different books are on a shelf, how many
different ways can the books be arranged? _____

(79) $\left(17\frac{1}{2}\right)^2 - \left(12\frac{1}{2}\right)^2 =$ _____

*(80) $699 \times 1430 =$ _____

2018 – 2019 University Interscholastic League Junior High Number Sense Test B – Key

(1) 54	(21) .37	*(40) 18999 – 20997	*(60) 5929 – 6552
(2) 437	(22) 36	(41) 9	(61) $\frac{1}{25}$ . .04
(3) 96	(23) $33\frac{1}{2}$; 33.5; $\frac{67}{2}$	(42) 5	(62) 30
(4) 102		(43) 80000	(63) 2
(5) $\frac{1}{2}$	(24) $5\frac{1}{4}$	(44) 9	(64) $\frac{4}{15}$
(6) 21	(25) 9312	(45) 105	(65) 50
(7) 2.9	(26) 216	(46) 9	(66) -14
(8) .025	(27) 99	(47) 540	(67) 68
(9) 15150	(28) 1.40	(48) 384	(68) 42
*(10) 189468 – 209412	(29) 33	(49) -8	(69) 1690
(11) 196	*(30) 228931 – 253029	*(50) 11358 – 12553	*(70) 2684473 – 2967049
(12) $\frac{5}{4}$; $1\frac{1}{4}$; 1.25	(31) 5	(51) 143	(71) 1
(13) 621	(32) -1	(52) 58719	(72) $\frac{5}{11}$
(14) 2018	(33) 12	(53) $14\frac{11}{24}$	(73) $\frac{5}{12}$
(15) $\frac{2}{3}$	(34) 28	(54) 17	(74) 12625
(16) 15	(35) -4	(55) 310	(75) 42
(17) 80	(36) 5	(56) 14	(76) 28
(18) $\frac{9}{13}$	(37) 6	(57) $3\frac{1}{2}$; $\frac{7}{2}$; 3.5	(77) 2600
(19) 6	(38) 324	(58) 8	(78) 120
*(20) 66690 – 73710	(39) -2	(59) $\frac{7}{13}$	(79) 150
			*(80) 949592 – 1049548

Note: *(Number)   x – y means an integer between x and y inclusive.
If an answer is of the type like 2/3 it cannot be written as .666… or $.\overline{6}$.

Contestant's Number _____

Final _____ _____
2nd _____ _____
1st _____ _____
Score   Initials

Read Directions Carefully   **Do Not Unfold This Sheet**
Before Beginning Test   **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!

(1) $63 - 36 =$ _____

(2) $365 + 366 =$ _____

(3) $8 \times 16 =$ _____

(4) $414 \div 6 =$ _____

(5) $\dfrac{3}{8} + \dfrac{3}{8} =$ _____(common fraction)

(6) $4.4 \times 5 =$ _____

(7) $7.21 - 3.41 =$ _____ (decimal)

(8) $0.605 \div 5 =$ _____(decimal)

(9) $50 \times 505 =$ _____

*(10) $667 \times 419 + 7 =$ _____

(11) $19^2 =$ _____

(12) $\dfrac{9}{10} \div \dfrac{3}{4} =$ _____

(13) $34 \times 36 =$ _____

(14) MCMLI = _____ (Arabic numeral)

(15) $\dfrac{9}{4} \times \dfrac{8}{15} =$ _____

(16) The mean of 14, 21, 11, and 10 is _____

(17) $13 + 17 + 21 + 25 =$ _____

(18) Which is larger, $\dfrac{11}{14}$ or $\dfrac{10}{13}$? _____

(19) $24 \div 5 + 16 \div 5 =$ _____

*(20) $143 \times 351 - 13 =$ _____

(21) 370 millimeters = _____decimeters

(22) 2 square yards = _____square feet

(23) $201 \div 3 =$ _____

(24) $5 \times \dfrac{7}{9} =$ _____ (mixed number)

(25) $92 \times 93 =$ _____

(26) 11 days = _____hours

(27) $36 \times 1.5 =$ _____

(28) If 15 ♥'s cost $2.25, then 10 ♥'s cost $ _____

(29) $9\dfrac{3}{4} \div \dfrac{3}{4} =$ _____

*(30) $501 \times 641 - 1 =$ _____

(31) $\sqrt[3]{216} =$ _____

(32) If $15 - 3x = 48$, $x =$ _____

(33) The greatest common divisor of 24 and 32 is _____

(34) $1800 \div 75 =$ _____

(35) If $f(x) = 17 + 5x$, then $f(-3) =$ _____

(36) If 36 is to 8 as 9 is to n, then $n =$ _____

(37) 35 has how many whole number divisors? _____

(38) If the circumference of a circle is 16π, then the area of this circle is $k\pi$. What is k? _____

(39) If $\dfrac{5}{8} + \dfrac{1}{x} = \dfrac{1}{2}$, $x =$ _____

*(40) $200 \times 24 + 25 \times 200 = $ _____

(41) If set A = {S, A, N, F, O, R, D, Y, C, E} and
B = {T, E, X, A, S}, then A $\cup$ B has how many

elements? _____

(42) 307524 ÷ 9 has a remainder of _____

(43) 488 × 125 =_____

(44) What is the perimeter of a rhombus with side $7\frac{1}{4}$?

_____

(45) 57 base 10 = _____base 5

(46) If $11 + 4x \geq 47$, then $x \geq$ _____

(47) What is the sum-total number of degrees in the

interior of a regular hexagon? _____ °

(48) The surface area of a cube with edge 5 is _____

(49) If a number minus 5 times itself is 24, then what is

the number? _____

*(50) $444\frac{4}{9}$ % × 1811 = _____

(51) 232 base 5 – 44 base 5 = _____base 5

(52) 783 × 111 =_____

(53) $9\frac{7}{8} + 6\frac{5}{6}$ = _____(mixed number)

(54) What is k in the sequence: 0, 3, 8, k, 24, . . ?

_____

(55) $\sqrt{84100} = $ _____

(56) What is the length of a side for a right triangle with

hypotenuse 50, and other leg 14? _____

(57) $\frac{5}{6} + \frac{4}{6} + \frac{3}{6} + \ldots + \frac{1}{6}$ =_____

(58) The number of unique edges for a rectangular box is

_____

(59) $\frac{1+3+5+\ldots+9}{1+2+3+\ldots+9}$ = _____

*(60) $74\frac{1}{3} \times 75\frac{2}{3} = $ _____

(61) What are the odds of drawing a red jack from a

standard deck of playing cards? _____

(62) $8! \div 6! \times 3! = $ _____

(63) $(48^2 \times 504) \div 5$ has a remainder of_____

(64) 0.4666 . . . = _____(common fraction)

(65) A hamburger patty with thickness 4 cm and diameter

10 cm has a volume of is $k\pi$, and k _____cm³

(66) The coordinates for the midpoint between (8, -6) and

(a, b) are (-4, -10). What is a?_____

(67) If $8\frac{1}{2}$ % of 16 is 4 % of n, then n =_____

(68) $\sqrt{196} + \sqrt{324} = $ _____

(69) $42^2 + 14^2 = $ _____

*(70) $26^4 = $_____

(71) $2^5 \div 4^3 - 2^{-1} = $_____

(72) If the probability of an event happening is $\frac{3}{7}$, what

are the odds that the event will happen?_____

(73) 0.08333 . . . + 0.1666 . . . =_____(common fraction)

(74) 23865 ÷ 111 = _____

(75) 12 more than 75% of 12 is _____

(76) The sum of positive integral factors of 20 is _____

(77) 25 × 14 × 8 = _____

(78) Six different books are on a shelf, how many

different ways can the books be arranged? _____

(79) $\left(20\frac{1}{2}\right)^2 - \left(15\frac{1}{2}\right)^2 = $_____

*(80) 349 × 1430 = _____

2018 – 2019 University Interscholastic League Junior High Number Sense Test C – Key

(1) 27

(2) 731

(3) 128

(4) 69

(5) $\dfrac{3}{4}$

(6) 22

(7) 3.8

(8) .121

(9) 25250

*(10) 265506 – 293454

(11) 361

(12) $\dfrac{6}{5}$; $1\dfrac{1}{5}$; 1.2

(13) 1224

(14) 1951

(15) $\dfrac{6}{5}$; $1\dfrac{1}{5}$; 1.2

(16) 14

(17) 76

(18) $\dfrac{11}{14}$

(19) 8

*(20) 47671 – 52689

(21) 3.7; $\dfrac{37}{10}$; $3\dfrac{7}{10}$

(22) 18

(23) 67

(24) $3\dfrac{8}{9}$

(25) 8556

(26) 264

(27) 54

(28) 1.50

(29) 13

*(30) 305083 – 337197

(31) 6

(32) -11

(33) 8

(34) 24

(35) 2

(36) 2

(37) 4

(38) 64

(39) -8

*(40) 9310 – 10290

(41) 12

(42) 3

(43) 61000

(44) 29

(45) 212

(46) 9

(47) 720

(48) 150

(49) -6

*(50) 7647 – 8451

(51) 133

(52) 86913

(53) $16\dfrac{17}{24}$

(54) 15

(55) 290

(56) 48

(57) $2\dfrac{1}{2}$; $\dfrac{5}{2}$; 2.5

(58) 12

(59) $\dfrac{5}{9}$

*(60) 5344 – 5905

(61) $\dfrac{1}{25}$; .04

(62) 336

(63) 1

(64) $\dfrac{7}{15}$

(65) 100

(66) -16

(67) 34

(68) 32

(69) 1960

*(70) 434128 – 479824

(71) 0

(72) $\dfrac{3}{4}$; .75

(73) $\dfrac{1}{4}$

(74) 215

(75) 21

(76) 42

(77) 2800

(78) 720

(79) 180

*(80) 474117 – 524023

Note: *(Number)   x – y means an integer between x and y inclusive.
If an answer is of the type like 2/3 it cannot be written as .666… or $.\overline{6}$.

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 story will present a clear thesis with well-developed paragraphs focused on the thesis. The use of transitions will also be examined as well as the effectiveness of support for the thesis. 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.

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.

UIL

Writing Events

JUDGE'S BALLOT

___CREATIVE WRITING   ___READY WRITING   ___EDITORIAL WRITING

INSTRUCTIONS

Each judge should use a copy of this form to rank each contestant's entry. Refer to the *Constitution and Contest Rules* or Evaluation Sheet for the criteria used to evaluate each contest.

SITE _____   **DATE** _____

GRADE   2   3   4   5   6   7   8

CONTESTANT NUMBER/CODE	TITLE OF COMPOSITION	JUDGE RANK	PLACE WINNER*
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

* **PLACE WINNER** indicates the final ranking (first through sixth place) of the contestants if several judges evaluate the papers.

Judge's signature_____

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.

	POOR	**FAIR**	**GOOD**	**EXCELLENT**
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 one idea and contributes to an understanding of main idea or thesis.

	POOR	**FAIR**	**GOOD**	**EXCELLENT**
Clear thesis	_____/3	_____/7	_____/11	_____/14
Well-developed paragraphs, focused on one idea	_____/3	_____/7	_____/11	_____/14
Transition	_____/3	_____/7	_____/11	_____/14
Thesis support	_____/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.

	POOR	**FAIR**	**GOOD**	**EXCELLENT**
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 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*_____

2018-19 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.

SEVENTH AND EIGHTH GRADES

Topic: *Cell Phone Age*

People often say that kids these days are too interested in computers and cell phones. Imagine that a Texas law might be enacted with a requirement that you must be 16 years old to have a cell phone. Write a letter persuading the governor of Texas that this law would be good or bad for people in Texas. Be sure not to include your name or school in the letter.

Topic: *Resolving Conflict*

Think about a time when there was a conflict between two or more people in your life and you were caught in the middle of their problem. Write an essay explaining what was difficult about the situation and how you tried to help resolve it. Make sure not to include your name.

2018-19 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.

SEVENTH AND EIGHTH GRADES

Topic: *Balancing Values*

A common debate in government is how to balance freedom, order, and equality. Think about each of those values, and then write an essay to persuade someone that either freedom, order, or equality is most important.

Topic: *Interesting Creation*

You have probably created something during your life, whether it was art, an invention, or something else. Think about everything you have created and write an essay describing the most interesting thing you have ever made and tell what prompted you to create.

2018-19 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.

SEVENTH AND EIGHTH GRADES

Topic: *Soda Ban*

Imagine you have just learned that the city council where you live is considering banning soda from restaurants and schools. Think about the potential advantages and disadvantages of this decision. Then, write a letter to the city council persuading them of your opinion. Make sure not to include your name or school in the letter.

Topic: *Real World Experience*

Think about a time when something you learned in school was useful for something in the "real world." Write an essay describing the experience and how the knowledge learned in school helped you in some way.

CONTESTANT NUMBER:

University Interscholastic League
A+ Science Contest • Answer Sheet

Write your contestant number in the upper right corner, and circle your level below.
Circle Level: Science I   Science II

1. _____   19. _____

2. _____   20. _____

3. _____   21. _____

4. _____   22. _____

5. _____   23. _____

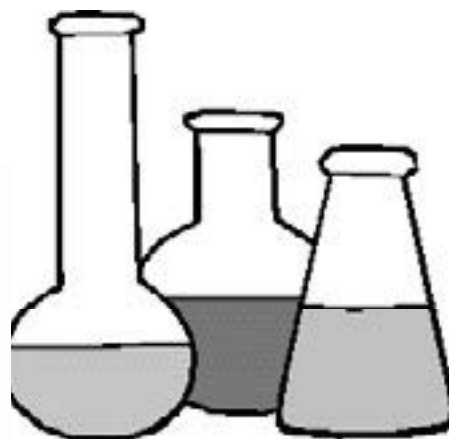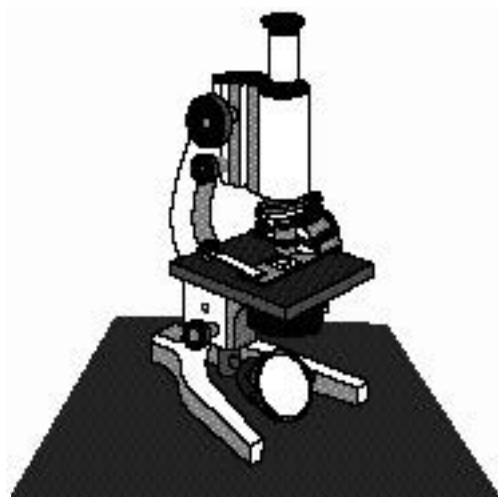6. _____   24. _____

7. _____   25. _____

8. _____   26. _____

9. _____   27. _____

10. _____   28. _____

11. _____   29. _____

12. _____   30. _____

13. _____   31. _____

14. _____   32. _____

15. _____   33. _____

16. _____   34. _____

17. _____   35. _____

18. _____

INVITATIONAL 2018-2019

A+ ACADEMICS

University Interscholastic League

Science I

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-2019 A+ SCIENCE I
INVITATIONAL TEST

1. Which of the following are considered the products of photosynthesis?

$$6CO_2 \text{ Carbon dioxide} + 6H_2O \text{ Water} \xrightarrow{\text{Light}}$$

    A. Water & Sucrose   C. Oxygen & Water
    B. Carbon Dioxide & Oxygen   D. Oxygen & Glucose

2. The rate of blood flow depends on both blood pressure and the resistance to flow due to vessels in the body. What other force is able to affect the flow of blood in a body?
    A. Gravity   C. Air Pressure
    B. Tension   D. Magnetism

3. In an energy pyramid, approximately how much energy is transferred to another organism when it is consumed?
    A. .01   B. .1   C. .001   D. 1/100

4. Which of the following best illustrates a chemical change?

A.

B.

C.

D.
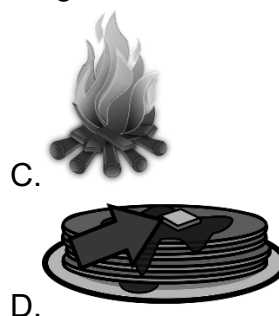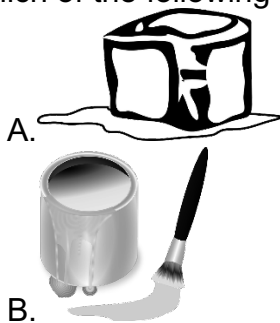
5. A pot of water heating on a stove best demonstrates which of the following forms of heat transfer?
    I.   Conduction
    II.   Convection
    III.   Radiation

    A. Only I
    B. Only II
    C. I & III
    D. I & II
    E. I, II, & III

6. Which of the following is not an immediate impact to a region that has been flooded?
   A. Crop destruction
   B. Rip tides
   C. Loss of life
   D. Increase of water borne diseases

7. According to NASA, which of the following is not a requirement for life to arise and thrive on a planet?
   A. Energy source
   B. Liquid water
   C. Nitrogen
   D. Carbon

8. Which of these geological features in Texas was formed by erosion?
   A. Palo Duro Canyon
   B. Guadalupe Mountains
   C. Caprock
   D. Western portions of the Edward's Plateau

9. The SEV (space exploration vehicle) has many surface and in-space components that enable space exploration. Which of the following best shows an in-space characteristic of the SEV?

   A. International docking system
   B. Pivoting wheels
   C. Both of these
   D. Neither A or B

10. Which of the following is not true about groundwater?
    A. There is not a relationship between ground and surface water
    B. Groundwater is a renewable resource
    C. Groundwater is a significant source of water supply
    D. Groundwater is trapped through wells or rocks beneath the surface of the Earth

11. A school project requires that students create a biome in a bottle. If the student uses rocks, dirt, and perennial grasses in their project, which biome would most likely be represented?
    A. Desert
    B. Taiga
    C. Rain forest
    D. Grassland

12. According to the United Nations Environment Programme (UNEP), biodiversity measures variation at all of the following except:
    A. Within a species
    B. Between a species
    C. Atmospheric
    D. Ecosystem

13. Students observe a garden as shown:
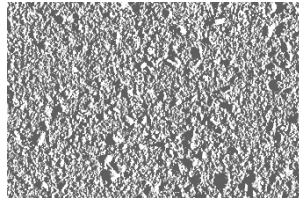
Using your knowledge of succession, order the following statements chronologically.

I.   Small seedlings emerge from soil.
II.   Some plants begin to flower.
III.   There is a lot of variety of plants.
IV.   Soil is loose and there is no plant growth.

A. I, II, III, IV   C. IV, II, III, I
B. IV, I, III, II   D. III, IV, I, II

14. Digestive systems of mammals are adapted to maximize the digestion and absorption of food. Which of the following is not a part of the digestive system?
    A. Intestine   C. Larynx
    B. Gallbladder   D. Stomach

15. Frogs hibernate to escape freezing temperatures during winter. Which is not a feature that aids in their survival during this time?
    A. Slow respiration rate
    B. Decreased heart rate
    C. Increased body temperature

16. This gland functions to regulate many body functions.
    A. Pituitary   C. Adrenal
    B. Thyroid   D. Reproductive

17. Which of the following does not show an example of selective breeding?
    A. Cattle that produce lots of   C. Crops resistant to certain
        meat   diseases
    B. Longevity   D. Stature of a horse

18. Which of the following is a correct response for gravitropism?
    A. Negative upward growth   C. Growth towards the point of contact
    B. Growth toward radiant energy   D. Negative growth downward

19. Which of the following scientists did not help to summarize our modern cell theory?
    A. Schleiden   C. Schwann
    B. Koch   D. Virchow

20. The framework for a cell within the cytoplasm is most similar to which organ system?

    A. Respiratory
    B. Immune
    C. Circulatory
    D. Skeletal
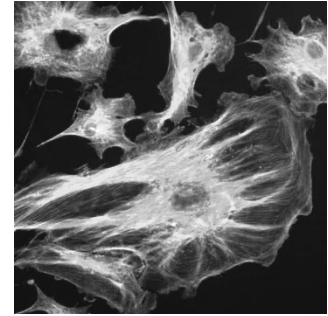
21. Which condition arises when more water is lost by evaporation than is absorbed by the roots from the soil?
    A. Hunger   C. Excretion
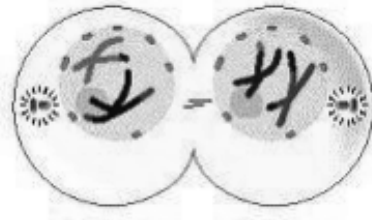   B. Wilting   D. Tropism

22. The picture refers to a __ cell.

    A. Prokaryotic
    B. Eukaryotic
    C. Plasmid
    D. Basic

23. Which stage of meiosis is shown?
    A. Prophase I
    B. Prophase II
    C. Telophase I
    D. Telophase II

24. Which structure synthesizes proteins that are used by a cell?
    A. Chromatin
    B. Nucleons
    C. Ribosome
    D. Endoplasmic reticulum

25. For the given genotypes, Rr x Rr, what is the percent of offspring that are recessive?
    A. 25%   B. 50%   C. 75%   D. 0%

26. Many scientific discoveries begin with observations. Which of the following is a direct observation?
    A. Animals communicating by airborne chemicals
    B. Animals navigating using the Earth's magnetic field
    C. Organisms eating nectar from flowering plants
    D. Marine animals feeling vibration in the water

27. Which correctly shows where crossing over would occur?
    A. E & H
    B. B & C
    C. C & F
    D. A & B
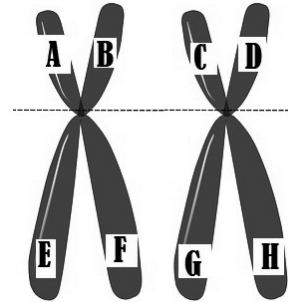
28. An experiment requires the use of a triple beam balance or an electronic balance. Which quantity is being directly measured?
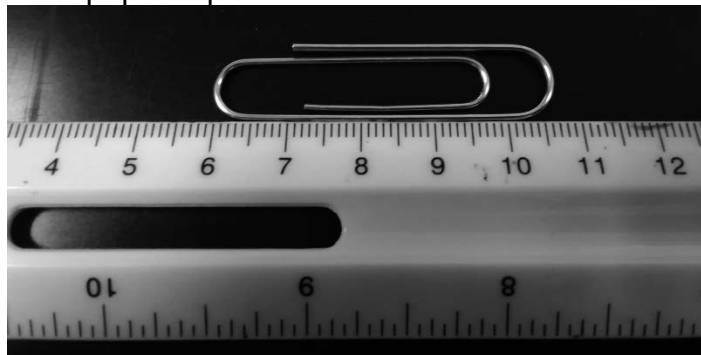   A. Density
    B. Volume
    C. Mass
    D. Temperature

29. If you observe this symbol in a lab investigation, which of the following is the best remedy?

    A. Dispose of the waste as directed
    B. Notify teacher of contact with the material
    C. Wash your hands before and after the experiment
    D. Go to the first aid kit

30. Record the length of the paper clip shown to the nearest millimeter.

    A. 6 cm   B. 10.6 cm   C. 4.6 cm   D. 16.6 cm

31. A graph is a pictorial representation of information recorded in a data table. Which type of graph shows information that is connected in a way, such as a rate?
   A. Line graph
    B. Bar graph
    C. Scatter plot
    D. Pie graph

32. What conclusion can be formed by analyzing the following data table?

Elevation	Number of Flowers	Number of Pollinators
6,500 m	2	1
3,250 m	6	7
1,150 m	20	11
750 m	18	37
150 m	31	39
25 m	30	35

    A. 3,250 meters is the best elevation for pollinators to survive and thrive
    B. Pollinators thrive with less precipitation
    C. Higher elevations have more rain, therefore flowers survive better
    D. There is a correlation between number of flowers and number of pollinators

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 Jupiter
    B. Prototype of a robot
    C. Data table
    D. Dinosaur fossil replica

34. The graph represents a person walking their dog. What would be the independent variable in this situation?
    A. Time
    B. Distance
    C. Dog
    D. Person
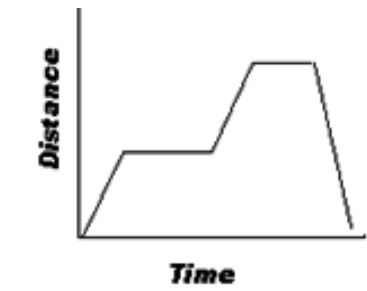
35. A scientist needs to measure the volume of water at −12°C. Which of following equipment would be best to obtain the volume?
    A. Ruler   C. Beaker
    B. Graduated cylinder   D. Electronic balance

UNIVERSITY INTERSCHOLATIC LEAGUE
2018-2018 SCIENCE I
INVITATIONAL TEST

Answer Key
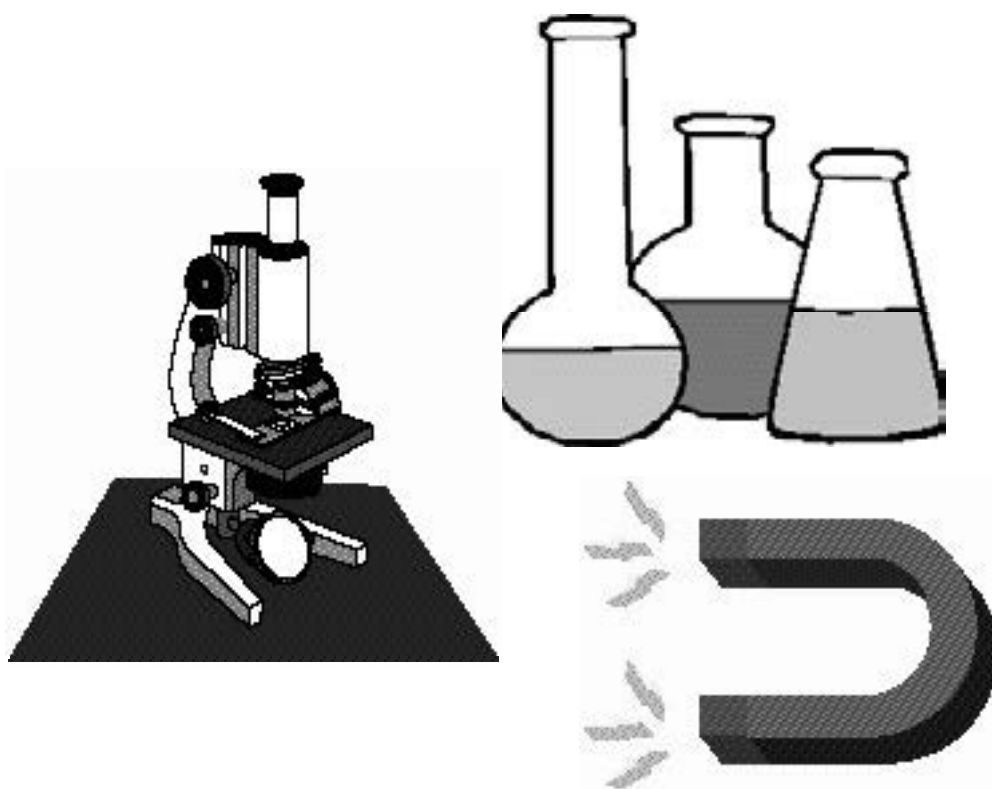
1. D	19. B
2. A	20. D
3. B	21. B
4. C	22. B
5. D	23. C
6. B	24. C
7. C	25. A
8. C	26. C
9. A	27. B
10. A	28. C
11. D	29. A
12. C	30. C
13. B	31. A
14. C	32. D
15. C	33. C
16. A	34. A
17. B	35. A
18. A	

A+ ACADEMICS

University Interscholastic League

Science II

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

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-2019 A+ SCIENCE II
INVITATIONAL TEST

1. A graph is a pictorial representation of information recorded in a data table.
    Which type of graph shows quantitative comparisons between ordered pairs?
    A. Line graph   C. Scatter plot
    B. Bar graph   D. Pie graph

2. What conclusion can be formed by analyzing the following data table?

Elevation	Number of Flowers	Number of Pollinators
6,500 m	2	1
3,250 m	6	7
1,150 m	20	11
750 m	18	37
150 m	31	39
25 m	30	35

   A. 3,250 meters is the best elevation for pollinators to survive and thrive
   B. Pollinators thrive with less precipitation
   C. Higher elevations have more rain, therefore flowers survive better
   D. There is a correlation between number of flowers and number of
       pollinators

3. 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 Jupiter
    B. Prototype of a robot
   C. Dinosaur fossil replica
    D. Data table

4. The graph represents a person walking their dog. What
    would be the independent variable in this situation?
    A. Time   C. Dog
    B. Distance   D. Person

5. A scientist needs to measure the volume of water at –12ºC. Which of
    following equipment would be best to obtain the volume?
    A. Ruler   C. Beaker
    B. Graduated cylinder   D. Electronic balance

6. How many electrons, protons, and neutrons are contained in the following atom?

    A. 55 e⁻; 55 p⁺; 77 n⁰
    B. 132 e⁻; 132 p⁺; 55 n⁰
    C. 187 e⁻; 187 p⁺; 55 n⁰
    D. 77 e⁻; 55 p⁺; 55 n⁰

    | 55 |
    | **Cs** |
    | 132 |
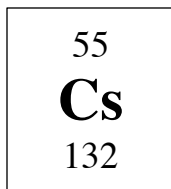
7. Which best describes an atom of Neptunium?
    A. It can be divided into smaller particles that retain all of its properties
    B. It can not be divided into smaller particles that retain all of its properties
    C. It doesn't possess properties of larger quantities of neptunium
    D. It atomic number is zero

8. Which of the following is not one of the four blocks of the periodic table?
    A. s   B. p   C. d   D. h

9. Which of the following is the correct formula for ethanol?
    A. H_3O C. C_2H_6O
    B. NH3   D. NaCl

10. As a rocket launches into outer space, which law best explains how it is able to provide enough thrust to reach orbit?
    A. Law of inertia
    B. Law of force and acceleration
    C. Law of gravitation
    D. Law of action-reaction

11. If someone was traveling at 45 mph north, which quantity does this best refer to?
    A. Speed
    B. Direction
    C. Velocity
    D. Acceleration

12. If 50 grams of sodium reacts with chlorine to form 175 grams of salt, how many grams of chlorine is needed to complete this reaction?
    A. 50 g   C. 175 g
    B. 125 g   D. 225 g

13. What will occur to the truck shown?

    A. Balanced forces make the truck slow down
    B. Balanced forces make the truck speed up
    C. Unbalanced forces make the truck speed up
    D. Unbalanced forces make the truck slow down

    100 N   50 N
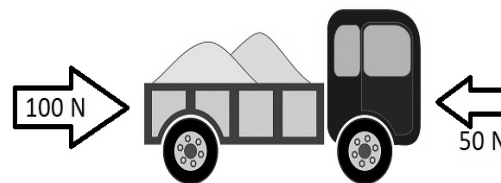
14. Earth's oceans respond to the moon's gravitational pull by bulging and dipping as the moon rotates around the Earth. As the ocean bulges toward the moon a ___ tide is created.
   A. Low   C. Spring
        B. High   D. Constant

15. Complete the phrase:
At the new moon phase, _____.
    A. The moon is so close to the sun in the sky that none of the side facing the Earth is illuminated.
    B. The moon is behind the earth in space with respect to the sun.
    C. The half-lit moon is highest in the sky at sunset, and then sets about six hours later.

16. If the following orientation of the Sun, Moon, and Earth occurs, what events in most likely observed?
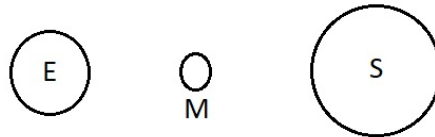
    A. Blue Moon   C. Solar Eclipse
   B. Pink Moon   D. Lunar Eclipse

17. Which individuals discovered cosmic microwave radiation?
    A. Lemaitre   C. Watson & Crick
   B. Hubble & Einstein   D. Penzias & Wilson

18. Geologists obtain indirect evidence about the interior of the Earth by:
    A. Measuring pressure differences at the surface
    B. Guesstimating the temperature of the core
    C. Looking at the layers of the Earth
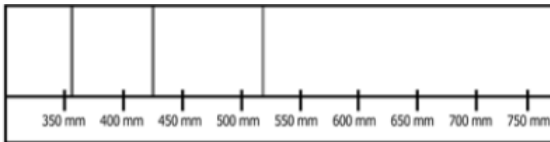   D. Recording and analyzing seismic waves

19. Which graphic best illustrates our Milky Way galaxy?
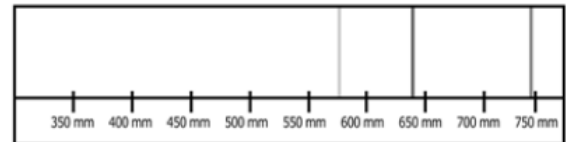

A.

C.

B.
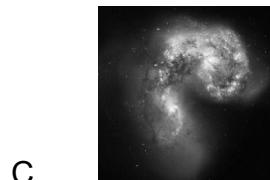
20. Given the following emission spectra from a distant star. Determine which element is mostly present.
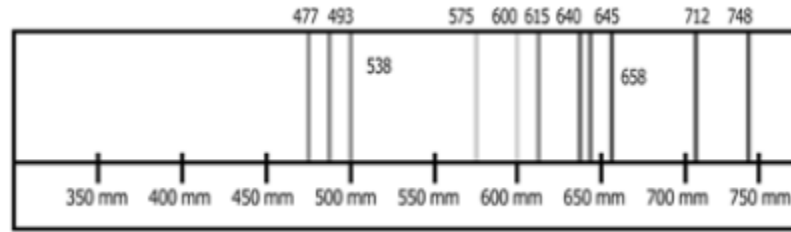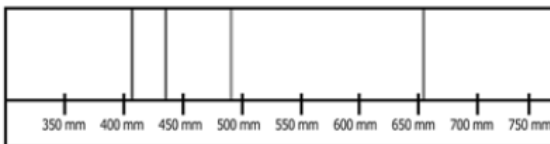

A.
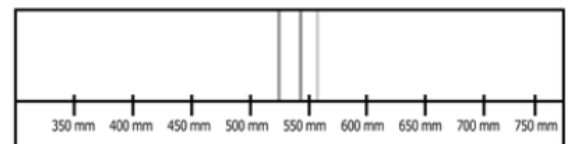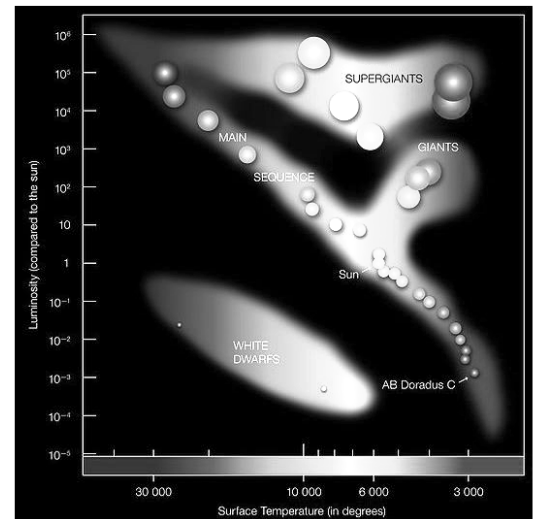

C.

B.

D.

21. Using the diagram provided, which region contains superhot, small, and not very luminous stars?

   A. Red giants
   B. Blue giants
   C. Main sequence
   D. White dwarfs

The Hertzsprung-Russell Diagram

ESO Press Photo 28c/07 (19 June 2007)

22. Hurricanes will continue to grow and strengthen, providing which of the following?
   A. It remains over a source of cold, moist air
   B. It remains over a source of cold, dry air
   C. It remains over a source of hot, moist air
   D. It remains over a source of hot, dry air

23. A collision between two pieces of continental crust at a converging boundary produces a:
   A. Mid ocean ridge   C. Rift valley
   B. Deep ocean trench   D. Mountain range

24. Local winds are influenced by which of the following?
    A. Coriolis effect
    B. Latitude
    C. Geography of area
    D. Temperature difference

25. This is a two-dimensional model of the Earth's three-dimensional surface.
    A. Contour map
    B. Physical map
    C. Thematic map
    D. Political map

26. Which of the following is not classified as a biotic factor in an environment?
    A. Bacteria
    B. Water
    C. Mushroom
    D. Shrub

27. Most thermal energy in the atmosphere moves due to:
    A. Conduction
    B. Convection
    C. Radiation

28. Emily is heating a liquid in a test tube. According to proper lab safety procedures, what direction should the test tube correctly be positioned?
    A. In a direction pointing toward herself
    B. In a direction pointing towards herself
    C. In a direction pointing way from herself and others
    D. In a direction pointing towards others

29. A bird's food supply is a species of beetle that lives in the grass. A severe drought occurs and causes much of the vegetation to die. Which trait of the beetle will allow them to survive the best?
    A. Size of the body
    B. Size of the legs
    C. Brown coloring
    D. Green coloring

30. Which of the following is not a positive human impact made on the oceans?
    A. Some laws and policies
    B. Coastal cleanups
    C. Artificial reefs
    D. Overfishing

31. How are the isotopes of Oxygen – 16 and Oxygen – 18 different?
    A. Number of protons
    B. Number electrons
    C. Number of neutrons
    D. Atomic number

32. A group of students measures the displacement of a moving toy car. Which of the following tools is needed to collect this data?
    A. Balance
    B. Graduated Cylinder
    C. Meter Stick
    D. Spring Scale

33. The diagram below shows three horizontal forces acting on an object. Neglecting all sources of friction, what is the magnitude of the force, F, if the object begin to slow?

A. 20 N   B. 7 N   C. 12 N   D. 17 N

34. A student conducts an experiment to measure the acceleration of falling bodies, which is 9.8 m/s^2. The student collects an experimental value of 11.3 m/s^2. The most likely reason for the discrepancy is due to:
    A. Air friction
    B. Human error
    C. Mass of the object
    D. Potential energy of the object

35. Which of the following is not a way for humans to reduce their dependence on natural resources?
    A. Turn off flowing water while brushing your teeth
    B. Recycle plastic products
    C. Turn off lights when not in use
    D. Set air conditioner a few degrees lower during the summer

UNIVERSITY INTERSCHOLATIC LEAGUE
2018-2019 SCIENCE II
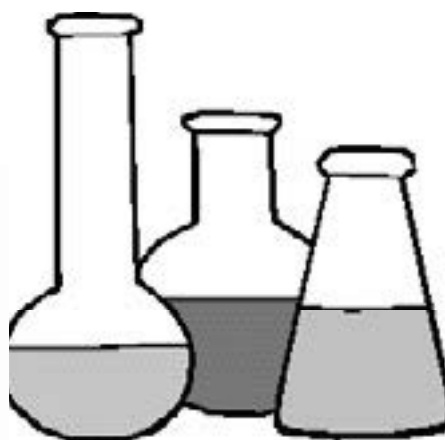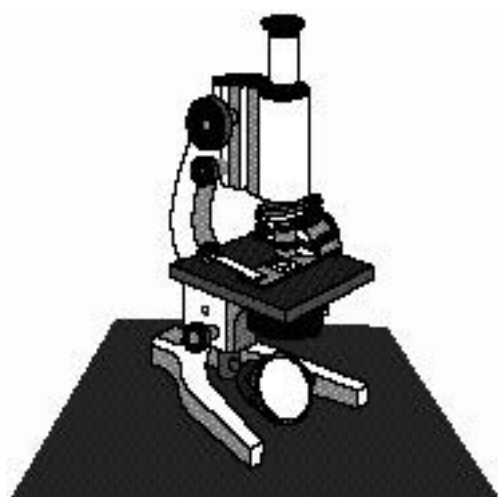## INVITATIONAL TEST

Answer Key

1. C		19. B	
2. D		20. C	
3. D		21. D	
4. A		22. C	
5. A		23. D	
6. A		24. C	
7. B		25. A	
8. D		26. B	
9. C		27. B	
10. D		28. C	
11. C		29. C	
12. B		30. D	
13. C		31. C	
14. B		32. C	
15. A		33. A	
16. C		34. B	
17. D		35. D	
18. D			

A+ ACADEMICS

University Interscholastic League

Science I

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

UNIVERSITY INTERSCHOLASTIC LEAGUE
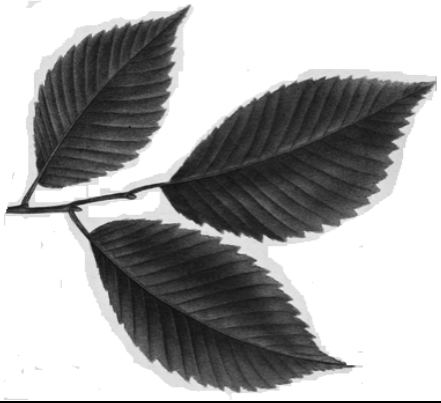## 2018-2019 A+ SCIENCE I
FALL/WINTER DISTRICT TEST

1. Carbon dioxide needed for photosynthesis enters the leaf via the ___
   A. Xylem
   B. Stomata
   C. Phloem
   D. Chloroplast

2. This action doesn't involve a change in the chemical makeup of a substance. Which of the following does not belong with this description?
   A. Painting
   B. Cutting
   C. Dissolving
   D. Cooking

3. A hot air balloon rising has which of the following energy transfers?
   A. Thermal to mechanical
   B. Mechanical to thermal
   C. Radiant to mechanical
   D. Mechanical to radiant

4. What is the correct order of the following organisms in a food chain?

| Seal | Algae | Mussel | Lobster |

   A. Algae, lobster, mussel, seal
   B. Lobster, algae, mussel, seal
   C. Algae, mussel, lobster, seal
   D. Mussel, algae, lobster, seal

5. If a plant has low turgor pressure, the plant appears to:
   A. Wilt
   B. Change colors
   C. Stand upright
   D. Remain unchanged

6. When it rains, the liquid water flows into the watershed. Along the way, runoff picks up loose liquids and other materials such as:
   A. Lawn chemicals
   B. Cleaning products
   C. Gasoline
   D. All of these

7. Today's atmosphere of Earth is primarily composed of:
   A. Oxygen
   B. Nitrogen
   C. Carbon dioxide
   D. Argon

8. Which is not an impact to an ecosystem following tornadic activity?
   A. Destruction of structures and plants
   B. Storm surge
   C. Water contamination
   D. Disruption of food chain

9. Soil is formed over time by which of the following processes?
   A. Erosion & weathering of rocks
   B. Erosion & decomposition of plants
   C. Weathering of rocks & decomposition of biotic material
   D. Weathering & erosion biotic material

10. Which biomes of Texas once contained large herds of grazing herbivores?
    A. Temperate forest   C. Grassland
    B. Tundra   D. Savanna

11. The human exploration of space began in the:
    A. 1950's   B. 1960's   C. 1970's   D. 1980's

12. In which geographic location would you expect to find the greatest species diversity?
    A. Russia   C. Panama
    B. Egypt   D. United States

13. Ants communicate with one another using pheromones. Ants lay down pheromones to help others find a food source. This is an example of:
    A. Structural adaptation
    B. Behavioral adaptation
    C. Physical adaptation
    D. Physiological adaptation

14. This type of succession involves changing an area from one lacking life form to one that contains numerous organisms. This best describes which of the following?
    A. Primary succession
    B. Secondary succession
    C. Tertiary succession
    D. Zeroth succession

15. Using the dichotomous key, correctly identify the branch of leaves shown.

1a. Leaves are spiny..*Pinus taeda*	
1b. Leaves are broad..Go to 2	
2a. Single leaf..Go to 3	
2b. Many leaflets..Go to 4	
3a. Leaf edge is smooth....................................*Cornus florida*	
3b. Leaf edge is serrated..................................*Ulmus americana*	
4a. Leaflet edges are smooth...........................*Albizia julibrissin*	
4b. Leaflet edges are serrated.........................*Juglans nigra*	

A. Pinus taeda   C. Ulmus americana
B. Cornus florida   D. Juglans nigra

16. What is described below?

> Over time, traits are passed on to more offspring. As favorable traits because more common in the population, species adapt to environment.
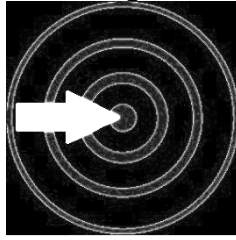
A. Selection   C. Variation
B. Adaptations   D. Inheritance

17. Xylem and phloem are structures that transport materials within a plant. The structures that enable the cells to function are:
A. Short and hollow   C. Long and hollow
B. Short and compact   D. Long and compact

18. Given the graphic below, what level of organization is best represented?

    A. Nucleus   C. Tissue
    B. Cell   D. Organ

19. This body system's main function is to provide protection. It is comprised of skin, hair, and nails. Which best describes this system?
    A. Immune   C. Nervous
    B. Endocrine   D. Integumentary

20. Organisms respond to external stimuli to maintain homeostasis. Shown is a lizard basking in the sun. The lizard responds to the stimuli by

    A. Dehydration
    B. Hibernating
    C. Aestivating
    D. Camouflage

21. As technology has developed and scientists learn more about the structure and functions of the cell, the cell theory has been modified. Which of the following is not a part of the modern cell theory?
    A. Cells contain heredity information
    B. Most organisms are made of cells
    C. All cells are the same chemical composition
    D. Cells arise from other cells via cell reproduction

22. The mitochondria is most similar to which organ system?
    A. Circulatory   C. Excretory
    B. Nervous   D. Digestive

23. In animal cells, there are several small structures as shown. They store nutrients, water, and waste from the cell. This best describes which of the following organelles?


    A. Vacuole
    B. Mitochondria
    C. Endoplasmic reticulum
    D. Nucleons

24. What determines the biological sex of a human?
    A. Presence of a X or Y chromosome
    B. Presence of the 21st chromosome
    C. Codominance
    D. Presence of the 47th chromosome

25. Elephants migrate during the dry season as a herd. This response is due to:
    A. Organism
    B. Species
    C. Community
    D. Population

26. Mutations occur in organisms. Which of the following is a harmful mutation?
    A. Sickle cell anemia
    B. Increase bone density in humans
    C. Nylonase in bacteria
    D. Murray Gray cattle in Australia

27. If data from repeated experiments is shown to support a hypothesis, which most likely will occur next?
    A. Data would become a law
    B. A conclusion would be defined
    C. A hypothesis is rejected
    D. A hypothesis will be revised

28. What part of meiosis is most similar to mitosis?
    A. Reduction division
    B. Interkinesis
    C. Meiosis I
    D. Meiosis II

29. 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

30. This is commonly used to put out small fires. It comes in four different categories. This description best refers to which of the following safety equipment?
    A. Fire blanket
    B. Fire extinguisher
    C. Eye wash
    D. Safety shower

31. In a student led experiment, 4 insects were placed at each end of a divided container based on specific temperature ranges. After 10 minutes, all of the insects 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?
    A. Insects need to be with other insects for warmth
    B. Insects moved to the preferred temperature range
    C. Insects randomly move until they locate other insects
    D. Insects moved until they ran out of energy and remained stationary

32. A student hypothesized that an aquatic plant will grow the most if they are exposed to light that has a wavelength of 475 nm. To test this hypothesis, the student should design an experiment with which independent variable?
    A. Color of the aquatic plant
    B. Rate of growth of the aquatic plant
    C. Wavelength of light that the aquatic plant is exposed to
    D. Time of exposure to light

33. What does this safety symbol indicate?
    A. This symbol indicates that a material is radioactive
    B. This symbol indicates an oxidizing substance
    C. This symbol indicates that this material is toxic
    D. This symbol indicates a biohazard

Number of Trees per Unit Area over Time
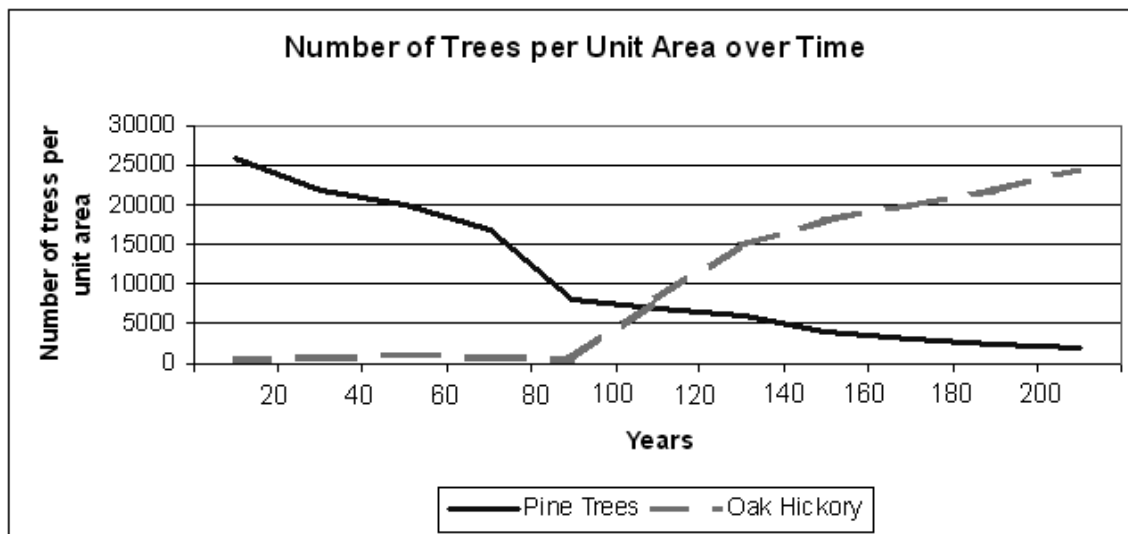
34. According to the data presented above, a 150-year-old community would contain pine trees with a density of approximately:
   A. 2,750 trees per unit area
   B. 4,250 trees per unit area
   C. 5,000 trees per unit area
   D. 17,500 trees per unit area

35. Of the following, which scientific instrument is commonly used to observe the external features of a fly's abdomen?
   A. Dissecting Microscope
   B. Electron Microscope
   C. Centrifuge
   D. Scanning tunneling microscope

UNIVERSITY INTERSCHOLATIC LEAGUE
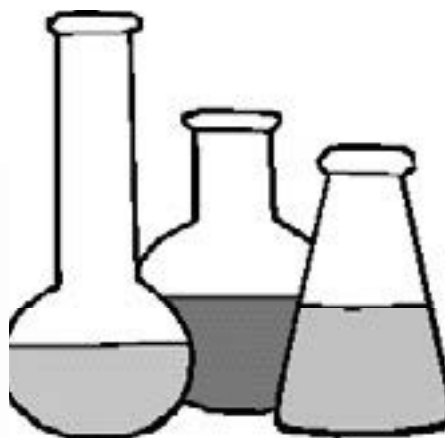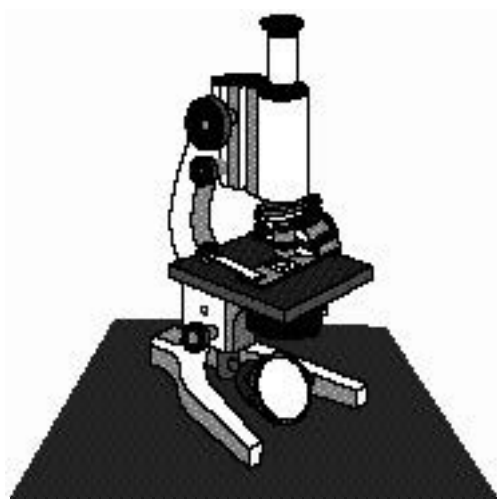## 2018-2019 SCIENCE I
FALL/WINTER DISTRICT TEST

Answer Key

1. B		19. D	
2. D		20. C	
3. A		21. B	
4. C		22. D	
5. A		23. A	
6. D		24. A	
7. B		25. D	
8. B		26. A	
9. C		27. B	
10. C		28. D	
11. B		29. C	
12. C		30. B	
13. B		31. B	
14. A		32. C	
15. C		33. A	
16. B		34. B	
17. C		35. A	
18. B			

A+ ACADEMICS

University Interscholastic League

Science II

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-2019 A+ SCIENCE II
FALL/WINTER DISTRICT TEST

1. 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

2. This is commonly used to put out small fires. It comes in four different categories. This description best refers to which of the following safety equipment?
   A. Fire blanket
   B. Fire extinguisher
   C. Eye wash
   D. Safety shower

3. In a student led experiment, 4 insects were placed at each end of a divided container based on specific temperature ranges. After 10 minutes, all of the insects 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?
   A. Insects need to be with other insects for warmth
   B. Insects moved to the preferred temperature range
   C. Insects randomly move until they locate other insects
   D. Insects moved until they ran out of energy and remained stationary

4. A student hypothesized that an aquatic plant will grow the most if it is exposed to light that has a wavelength of 475 nm. To test this hypothesis, the student should design an experiment with which independent variable?
   A. Color of the aquatic plant
   B. Rate of growth of the aquatic plant
   C. Wavelength of light that the aquatic plant is exposed to
   D. Time of exposure to light

5. What does this safety symbol indicate?
   A. This symbol indicates that a material is radioactive
   B. This symbol indicates an oxidizing substance
   C. This symbol indicates that this material is toxic
   D. This symbol indicates a biohazard

6. Elements in the same group of the periodic table have the same number of _____.
   A. Protons
   B. Nucleons
   C. Valence electrons
   D. Neutrons

Number of Trees per Unit Area over Time
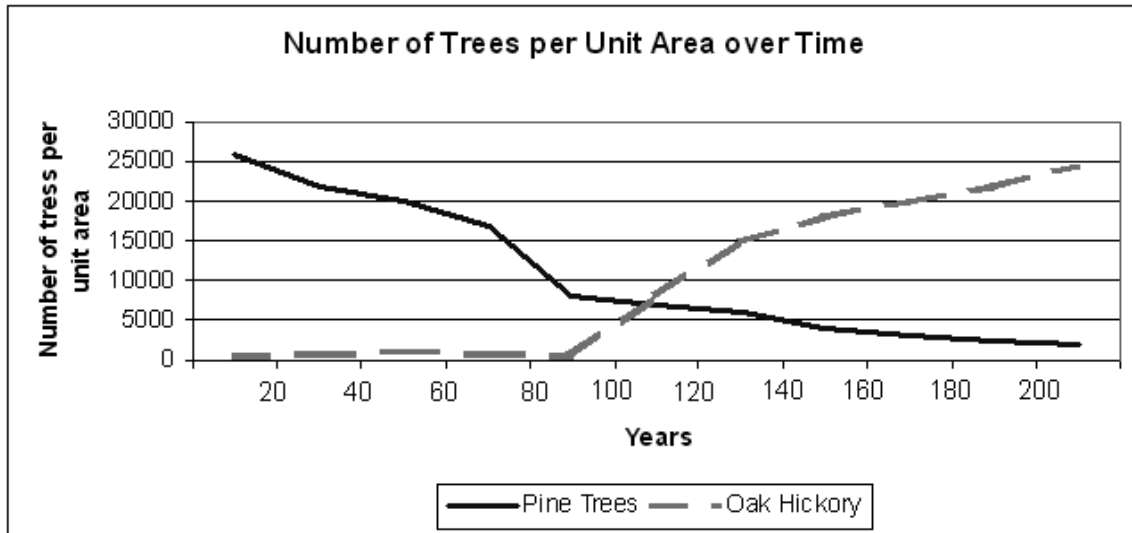
7. According to the data presented above, a 150-year-old community would contain pine trees with a density of approximately:
   A. 2,750 trees per unit area
   B. 4,250 trees per unit area
   C. 5,000 trees per unit area
   D. 17,500 trees per unit area
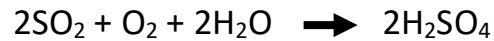
8. How many protons does the following element contain?
   A. 7
   B. 14
   C. 21
   D. 0

7
N
14.007
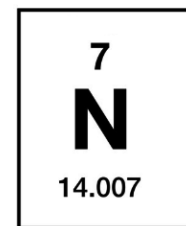
9. Which particle in an atom determines the identity of each particular atom?
   A. Electrons
   B. Protons
   C. Neutrons
   D. Nucleons

10. Given the following reaction, determine if it is balanced or unbalanced.

$$2SO_2 + O_2 + 2H_2O \rightarrow 2H_2SO_4$$

A. Balanced   B. Unbalanced
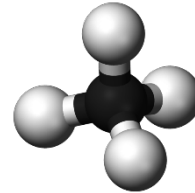
11. Given the molecule shown, which of the following could represent its chemical formula?
    A. C&H
    B. CH
    C. C_2H_4
    D. CH_4

12. When forces act upon an object it is dependent upon which of the following factors?
    A. Magnitude of the force
    B. Distance of the force
    C. Magnitude & direction of the force
    D. Distance & application of the force

13. Because of Earth's tilt on its axis, the amount of daylight varies throughout the year. The least amount of variation occurs at which of the following?
    A. Tropic of Cancer   C. Arctic Circle
    B. Tropic of Capricorn   D. Equator

14. Jackson walked 320 meters in 92.5 seconds. Using this information, which best describes which of the following quantities could be determined?
    A. Acceleration   C. Speed
    B. Friction   D. Velocity

15. Which of these is not an example of Newton's Third Law of Motion?
    A. Person in an automobile that is braking
    B. Rowing a boat
    C. Rocket propulsion
    D. Swimming forward in a pool

16. The moon appears to be more than half illuminated from Earth as seen by an observer. This is best described by which phase of the lunar cycle?
    A. Last quarter moon   C. Waxing crescent
    B. Waning crescent   D. Waxing gibbous

17. Which two scientists created a graph showing the relationship between a star's surface temperature and brightness.
    A. Russell & Hertzsprung   C. Watson & Crick
    B. Hubble & Dingle   D. Aller & Alcock

18. In addition to the moon, tides on Earth are caused by which of the following?
    A. Revolution of Earth
    B. Tilt of Earth
    C. Rotation of Earth

19. Galaxies come in a variety of shapes and sizes. Our Milky Way galaxy is referred to as this type of galaxy.
    A. Irregular   C. Planetary
    B. Elliptical   D. Spiral

20. What is Laurasia?
    A. A Polish scientist
    B. Another term for continental drift
    C. Name of the northern continent that existed millions of year ago
    D. Another name for an ancient dinosaur that existed millions of years ago

21. Telescopes are used to gain information about our solar system and the universe. Which wave cannot be captured and reflected using mirrors?
    A. Visible
    B. Gamma
    C. Reflecting telescope
    D. Refracting telescope

22. When continental plates pull apart at a divergent boundary on land, a(n) _____ forms.
    A. Mountain range   C. Ocean
    B. Rift valley   D. Continent

23. This theory about the origin of the universe postulates that matter is created throughout the universe. This violates the law of conservation of matter and also energy. Which theory does this describe?
    A. Big Bang Theory
    B. Open Universe Theory
    C. Creationism
    D. Steady State Theory

24. After the energy from the sun has reached the Earth, thermal energy always moves from _____ to _____ areas naturally.
    A. Cold; hot   C. Cold; cool
    B. Warm; hot   D. Hot; cold

25. Complete the following rule for topographic maps. Contour lines never cross. All points along a contour line represent a _____.
    A. Single elevation   C. Depression
    B. Closed circles   D. Sloping characteristic

26. This is the union of two fronts, shown below, as the cold front overtakes the warm front.

    A. Mix   C. Occluded
    B. Squall   D. Cold/warm

27. What resources are the penguins in the image competing for?

    A. Biotic
    B. Abiotic
    C. Biotic & abiotic
    D. They are not competing for any resources

28. Most hurricanes form at which of the following latitudes:
    A. Polar   B. Equator   C. Mid

29. Environmental changes can affect organisms and traits in the subsequent populations. Which of the following statements is true?
    A. Organisms can't change on their own to survive
    B. Organisms can change on their own to survive
    C. Organisms that have advantageous adaptations will die off
    D. Organisms with disadvantageous adaptations will survive

30. Which of the following has a positive impact on the ocean systems?
    A. Oil spill   C. Sewage and runoff
    B. Artificial reefs   D. Overfishing

31. If the mass number of an element is 14 and the atomic number is 7, how many nucleons does the following element contain?
    A. 7   B. 14   C. 21   D. 0

32. Susan ran south 400 meters in 92.5 seconds. Using this information, which of the following quantities could be determined?
    A. Acceleration   C. Speed
    B. Friction   D. Velocity

33. You are doing a lab with another student when her hair gets caught on the balance scale. She should have -
    A. Gotten a haircut before class today   C. Pulled her hair up in a ponytail or bun
    B. Skipped the lab   D. Worn a hat today

34. Where should a student properly discard liquid chemical waste, such as an acid or base?
    A. The sink
    B. Trash can
    C. Cardboard box
    D. Container identified by teacher

35. Flammable materials should never be dispensed or used near:
    A. Water   C. A flashlight
    B. An operating Bunsen burner   D. A broken glass container

UNIVERSITY INTERSCHOLATIC LEAGUE
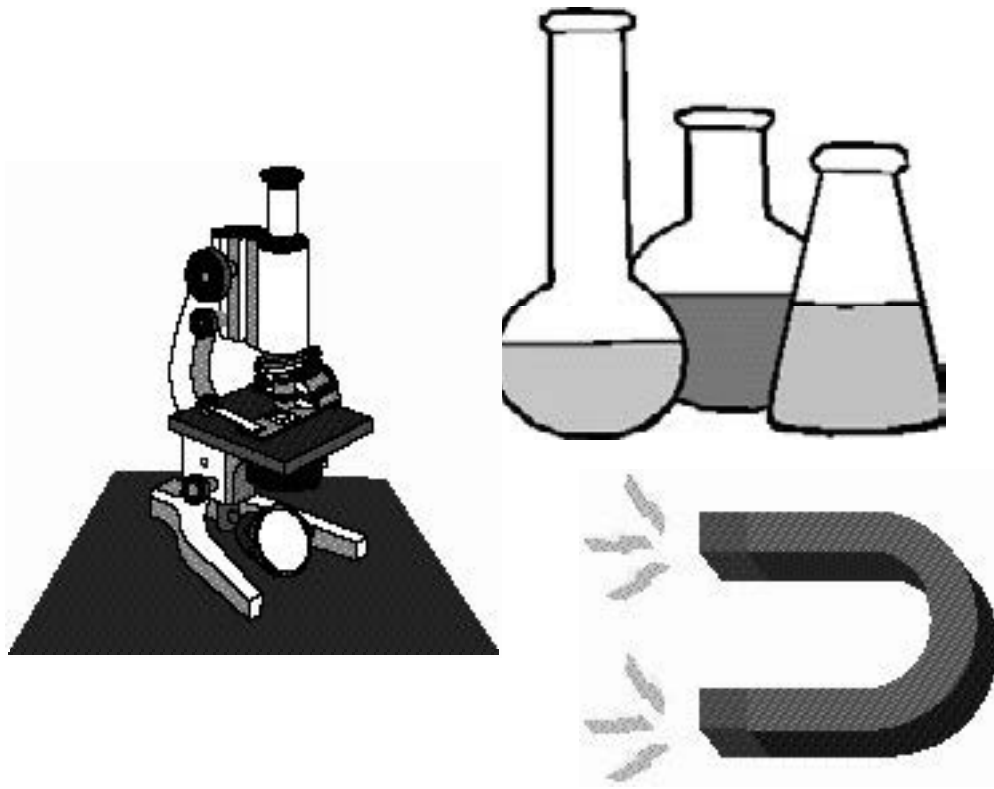## 2018-2019 SCIENCE II
FALL/WINTER DISTRICT TEST

Answer Key

1.	C	19.	D
2.	B	20.	C
3.	B	21.	B
4.	C	22.	B
5.	A	23.	D
6.	C	24.	D
7.	B	25.	A
8.	A	26.	C
9.	B	27.	C
10.	A	28.	B
11.	D	29.	A
12.	C	30.	B
13.	D	31.	B
14.	C	32.	D
15.	A	33.	C
16.	D	34.	D
17.	A	35.	B
18.	C		

University Interscholastic League

Science I

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

UNIVERSITY INTERSCHOLATIC LEAGUE
2018-2019 A+ SCIENCE I
SPRING DISTRICT TEST

1. Using the dichotomous key correctly identify the branch of leaves shown.

1a. Leaves are spiny...*Pinus taeda* 1b. Leaves are broad..Go to 2
2a. Single leaf...Go to 3 2b. Many leaflets..Go to 4
3a. Leaf edge is smooth....................................*Cornus florida* 3b. Leaf edge is serrated..................................*Ulmus americana*
4a. Leaflet edges are smooth..........................*Albizia julibrissin* 4b. Leaflet edges are serrated.........................*Juglans nigra*

   A. *Albizia julibrissin*   C. *Ulmus americana*
   B. *Cornus florida*   D. *Juglans nigra*

2. Photosynthesis uses the energy from the sun to covert water and __ into high energy __ and oxygen. Correctly complete the missing words.
   A. Carbon dioxide; starch   C. Carbon dioxide; sugar
   B. Starch; carbon dioxide   D. Sugar; carbon dioxide

3. When you eat a bag of chips you are consuming which of the following types of energy?
   A. Chemical potential   C. Thermal
   B. Radiant   D. Mechanical

4. Which of the following is a physical change?
   A. Toasting bread   C. Roasting a marshmallow
   B. Lighting a match   D. Burning a candle

5. Organisms with tropisms will naturally turn in response to a given stimulus. In a negative tropism, the organism will move:
   A. Toward the stimulus   C. Does not move in relation to
   B. Away from the stimulus   the stimulus

6. Sequence the trophic levels to show the flow of energy in this following energy pyramid.

   A. Sun, A, B, C
   B. A, B, C, Sun
   C. Sun, C, B, A
   D. C, B, A, Sun
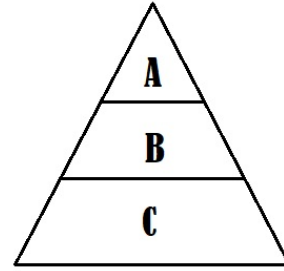
7. In some regions, extreme flooding is expected to increase. This could have serious effects on important natural habitats such as:
   A. Icebergs
   B. Rivers
   C. Deserts
   D. Mountains

8. Which of the following planets is not considered to lie in the habitable zone?
   A. Earth
   B. Venus
   C. Mars
   D. Uranus

9. What supplies sixty percent of all water used in the state of Texas, according to the Texas Water Development board?
   A. Reservoirs
   B. Aquifers
   C. Rivers
   D. Oceans

10. Which of the following is a natural agent of weathering and erosion?
    A. Constant temperature
    B. Fire
    C. Air pollution
    D. Water

11. The amount of oxygen in a fish tank is a ___ that can affect the number of organisms living in the tank.
    A. Tolerance zone
    B. Biotic factor
    C. Limiting factor
    D. Environmental factor

12. What was the first manned satellite to orbit Earth?
    A. Sputnik
    B. Vostok
    C. Explorer I
    D. Mercury

13. An area of a forest that experiences very little change in its composition of species would most likely show which of the following:
    A. Climax community
    B. Primary succession
    C. Secondary succession
    D. Primary community

14. Many diversity indices have been developed to measure biodiversity. This model combines species richness and species evenness.
   A. Shannon index
   B. Renyi index
   C. Einstein's index
   D. Simpson's index

15. When cold weather drives insects away, bats can do which of the following to help them survive?
   A. Hibernate
   B. Migrate
   C. Both of these

16. Another adaptation that allows fishes to live in an aquatic environment is their gills. Gills are made up of very thin tissues because…
   A. It enables O_2/CO_2 exchange
   B. It enables O_2/CO exchange
   C. It enables N_2/O_2 exchange
   D. It enables H_2/O_2 exchange

17. In order to acquire different food sources, a finch's beak is varied in shape. A large billed beak bird would feed more efficiently on which of the following food sources?
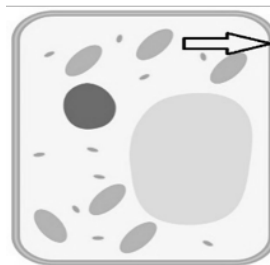   A. Small, hard seeds
   B. Large, hard seeds
   C. Small, soft seeds
   D. Large, soft seeds

18. Which of these is not considered an organ in a plant?
   A. Leaf
   B. Root
   C. Xylem
   D. Flower

19. This cell structure controls the movement of substances in and out of the cell.
   A. Cell wall
   B. Cell membrane
   C. Endoplasmic reticulum
   D. Nucleus

20. The discovery of cells and the development of the cell theory would not have been possible without the invention of a:
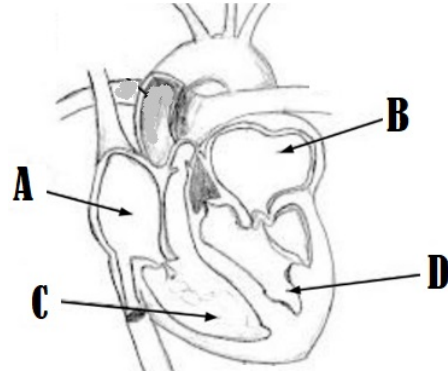   A. Magnifying glass
   B. Telescope
   C. Microscope
   D. Spectroscope

21. The endoplasmic reticulum transports materials from one part of the cell to another. This is most similar to which body system?
    A. Nervous
    B. Skeletal
    C. Digestive
    D. Circulatory

22. What part of the heart does the oxygen rich blood enter?
    A. A
    B. B
    C. C
    D. D

23. An organism that carries two dominant or two recessive alleles for any given trait is said to be:
    A. Heterozygous
    B. Hybrid
    C. Pure
    D. Hidden

24. Fight or flight is an automatic response. Most of the time this response is triggered which of the following occurs?
    A. A false alarm
    B. An adaptive response
    C. A freeze response
    D. A survival alarm

25. If a black dog (Bb) were crossed with a white dog (bb). What is the resulting phenotypic ratio?
    A. 0:1 black to white
    B. 1:0 black to white
    C. 1:1 black to white
    D. 3:1 back to white

26. This helps the body protect itself against pathogens.
    A. Vomiting
    B. Fever
    C. Dehydration
    D. Hunger

27. For an organisms with six pairs of chromosomes, how many possible combinations of gametes can be produces by random lining up?
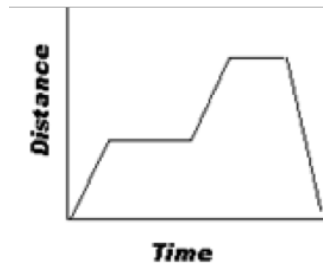   A. 32   B. 48   C. 64   D. 120

28. Which of the following shows an SI unit of measurement?
    A. 10 ft.
    B. 10 oz.
    C. 10 L
    D. 10 in.

29. What type of property is best represented in the picture above?
    A. Chemical   C. Conversation
    B. Physical   D. Elemental

30. One one-hundredth is expressed using the prefix:
    A. Centi-   C. Deci-
    B. Milli-   D. Micro-

31. In the scientific method after a conclusion is drawn, which of the following would not be done?
    A. Determine if the hypothesis is supported
    B. Determine if the hypothesis is not supported
    C. Test the hypothesis
    D. Modify the hypothesis as needed

32. How many liters are comprised of 2500 mL?
    A. .25 L
    B. 2.5 L
    C. 25 L
    D. 250 L

33. A scientists needs to measure the volume of water at 22°C. Which of following equipment would be best to obtain the volume?
    A. Ruler   C. Beaker
    B. Graduated cylinder   D. Electronic balance

34. A graph is a pictorial representation of information recorded in a data table. Which type of graph shows a statistical graphic which is divided into slices to illustrate numerical proportions?
    A. Line graph
    B. Bar graph
    C. Scatter plot
    D. Pie graph

35. The graph shows a person walking their dog. What would be the dependent variable in this situation?
    A. Time
    B. Distance
    C. Dog
    D. Person

UNIVERSITY INTERSCHOLATIC LEAGUE
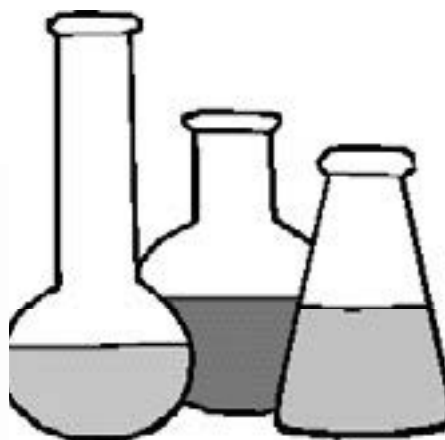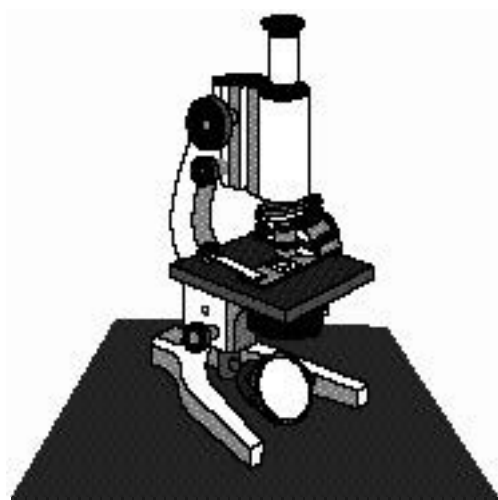## 2018-2019 SCIENCE I
SPRING DISTRICT TEST

Answer Key

1. A	19. B
2. C	20. C
3. A	21. D
4. D	22. B
5. B	23. C
6. C	24. A
7. B	25. C
8. D	26. B
9. B	27. C
10. D	28. C
11. C	29. B
12. B	30. A
13. A	31. C
14. D	32. B
15. C	33. B
16. A	34. D
17. B	35. B
18. C	

SPRING DISTRICT 2018-2019

A+ ACADEMICS

University Interscholastic League

Science II

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-2019 A+ SCIENCE II
SPRING DISTRICT TEST

1. One one-hundredth is expressed using the prefix:
   A. Centi-
   B. Milli-
   C. Deci-
   D. Micro-

2. In the scientific method after a conclusion is drawn, which of the following would not be done?
   A. Determine if the hypothesis is supported
   B. Determine if the hypothesis is not supported
   C. Test the hypothesis
   D. Modify the hypothesis as needed

3. How many liters are comprised of 2500 mL?
   A. .25 L
   B. 2.5 L
   C. 25 L
   D. 250 L

4. A scientist needs to measure the volume of water at 22°C. Which of following equipment would be best to obtain the volume?
   A. Ruler
   B. Graduated cylinder
   C. Beaker
   D. Electronic balance

5. A graph is a pictorial representation of information recorded in a data table. Which type of graph shows a statistical graphic which is divided into slices to illustrate numerical proportions?
   A. Line graph
   B. Bar graph
   C. Scatter plot
   D. Pie graph

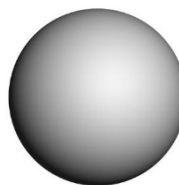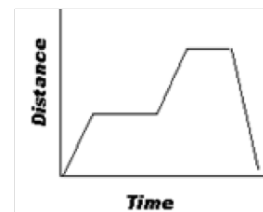6. How many outermost electrons does lithium and sodium have?
   A. 1
   B. 2
   C. 3
   D. 4

7. The graph shows a person walking their dog. What would be the dependent variable in this situation?
   A. Time
   B. Distance
   C. Dog
   D. Person

8. Which scientist's atomic model is represented?
   A. Democritus
   B. Dalton
   C. Rutherford
   D. Thompson

9. Two elements with the same number of protons but different number of neutrons is referred to as a(n)
   A. Molecule
   B. Isotope
   C. Atom
   D. Ion

10. In a chemical formula, a subscript is used when
   A. More than one mole is reacting
   B. Less than one mole is reacting
   C. More than one atom is represented
   D. Less than one atom is represented

11. Select the following correct reaction based on your knowledge of the law of conservation of mass.
   A. $N_2 + H_2 \rightarrow NH_3$
   B. $Fe + Cl_2 \rightarrow FeCl_3$
   C. $2Fe_2O_3 + 3C \rightarrow 4Fe + 3CO_2$
   D. $CH_4 + 2O_2 \rightarrow CO_2 + 3H_2O$

12. Using a graph of a train moving in a straight line, which of the segments show a balanced force?

   A. A & C
   B. B & D
   C. C & E
   D. A, C, & E
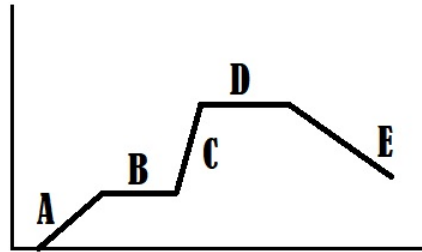
13. Which of the following is a common misconception many people have about Earth's seasons?
   A. Seasons are caused by the tilt of the Earth's axis
   B. Seasons are caused by the sun's gravitational force
   C. Seasons are caused by the distance from the Earth to the Sun
   D. Seasons are caused by the rotation of Earth on its axis

14. Which of the following is not used in calculating acceleration of an object?
   A. Initial velocity
   B. Average speed
   C. Time
   D. Final velocity

15. Even in a low speed head on test crash, ____ causes an unrestrained crash dummy to slam into the front windshield or seat directly in front of it. Correctly complete the missing word.
   A. Inertia
   B. Air resistance
   C. Gravity
   D. Friction

16. This is a cloud of gas and dust in outer space. It is a region where new stars are formed, while some are remnants of a dead or dying stars. This description best refers to which of the following terms?
    A. Nebula
    B. Galaxy
    C. Black hole
    D. Black dwarf

17. We see the moon in the night sky because …
    A. The moon is luminous
    B. The moon reflects light
    C. The moon absorbs light

18. Our sun is located in the Orion Arm of the Milky Way galaxy. The approximate distance from the center of the galaxy to our Sun is:
    A. 1,000 light years
    B. 2,600 light years
    C. 100,000 light years
    D. 260,000 light years

19. The relationship between the phases of the moon and the tides on Earth were discovered by which of the following individuals?
    A. Zheng He, a Chinese explorer
    B. Zhu Xi, a Chinese philosopher
    C. Aristotle, a Greek philosopher
    D. Pytheas, a Greek explorer

20. When using this type of telescope, astronomers do not have to worry about the amount of sunlight, clouds, or rain that might affect their observations.
    A. Reflecting
    B. Refracting
    C. Radio
    D. Optical

21. Which of the following tectonic plate collision will form a mountain, providing it is a convergent?
    A. Continental to oceanic
    B. Continental to continental
    C. Oceanic to oceanic

22. The big bang theory originated in 1927 with several scientists having contributed to it over the years. Which scientist discovered cosmic microwave radiation?
    A. Lemaitre
    B. Einstein & Hubble
    C. Aristotle
    D. Penzias & Wilson

23. The plate tectonic theory as we know it today, was formed from components of all of the following scientist research except:
    A. Wegner
    B. Hess
    C. Lacks
    D. Holmes

24. Which of the following best shows a depression as illustrated on a topographic map?

A.

B.

C.

D.
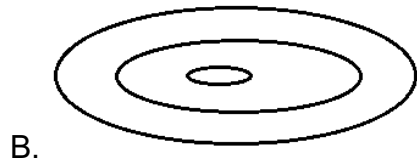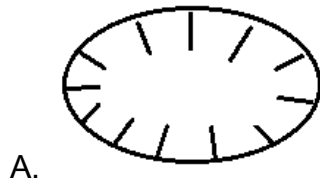
25. The movement of wind is affected by the rotation of earth. What causes the winds to change directions?
   A. Conduction
   B. Pressure differences
   C. Uneven heating
   D. Coriolis effect

26. Competition of organisms for biotic and abiotic factors in an environment can do which of the following?
   A. Increase the population
   B. Increase the resources
   C. Prevent population growth

27. The beginning of a hurricane starts with an area of ___ in a(n) ___ ocean. Correctly complete the blanks.
   A. High pressure; tropical
   B. Low pressure; tropical
   C. High pressure; artic
   D. Low pressure; artic

28. Which of these is not a physical adaptation of an organism to its environment?
   A. Migration
   B. Beak shape
   C. Teeth
   D. Camouflage

29. Looking at the diagram, which front is shown?

   A. Cold
   B. Warm
   C. Stationary
   D. Occluded

   Cold Air

   Warm Air
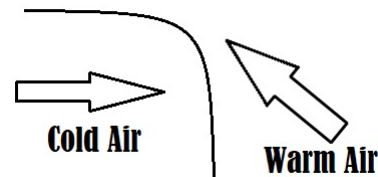
30. About seven billion tons of litter is dumped into the oceans each year. Of that litter, sixty percent of it is made of which of the materials listed?
   A. Metal
   B. Sewage
   C. Oil
   D. Plastic

31. Dmitri Mendeleev is given credit for developing the modern periodic table due to which of the following?
    A. He arranged known elements by their atomic number
    B. He arranged elements into distinctive groups and periods
    C. He arranged elements based on repeating properties
    D. He arranged known elements and also left blank spaces for elements yet to be discovered based on their properties

32. Which will experience more weathering?
    A. A rock in the Sonora Desert
    B. A rock in a decorative pond in someone's yard
    C. A rock on the beach in South Carolina
    D. A rock preserved in a museum

33. 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. The metric system is now used around the world instead of other less precise systems.
    C. Protons and electrons are now known to be made of smaller particles of matter.
    D. Heat, which was once thought to be fluid, now is known as a form of energy.

34. When did Newton first propose his Laws of Motion?
    A. During World War II
    B. After the American Civil War
    C. Approximately 300 years ago
    D. After humans orbited the Earth

35. Which of the following does not contain 4 atoms?
    A. H_2O_2
    B. $AlCl_3$
    C. H_2O
    D. $2O_2$

UNIVERSITY INTERSCHOLATIC LEAGUE
2018-2019 SCIENCE II
SPRING DISTRICT TEST

Answer Key

1. A		19. D
2. C		20. C
3. B		21. B
4. B		22. D
5. D		23. C
6. A		24. A
7. B		25. D
8. A		26. C
9. B		27. B
10. C		28. A
11. B		29. A
12. B		30. D
13. C		31. D
14. B		32. C
15. A		33. B
16. A		34. C
17. B		35. C
18. B		

CONTESTANT NUMBER:

UïL

University Interscholastic League
A+ Social Studies Contest • Answer Sheet

Write your contestant number in the upper right corner, and circle your grade below.
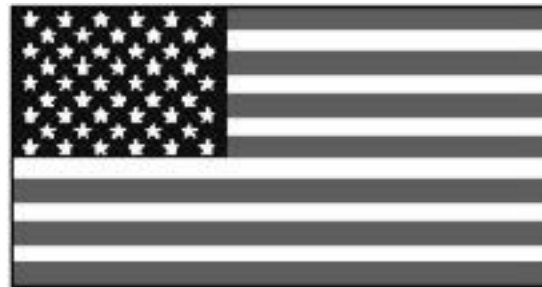**Circle Grade Level: 5   6   7   8**

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

University Interscholastic League

Social Studies
grades 7 & 8

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

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-19 A+ SOCIAL STUDIES
INVITATIONAL TEST — GRADES 7 & 8

1. What principle of government is illustrated in the following chart?

Texas Government		
Legislative	Executive	Judicial
Makes laws	Enforces laws	Interprets the laws

   a. Limited government
   b. Separation of powers
   c. Republicanism
   d. Federalism

"Humbly invoking the blessings of Almighty God, the people of the State of Texas, do ordain and establish this Constitution…" Texas Constitution of 1876

---

2. How does the Preamble to the Texas Constitution reflect the principle of popular sovereignty?
   a. Churches are the sole source of power for the government
   b. Governor has supreme power over the government
   c. The state government is to be held superior to the federal government
   d. The people of the State of Texas are clearly the source of power for the government

3. Which branch of the government contains the Senate and House of Representatives?
   a. Judicial
   b. Executive
   c. Legislative
   d. Religious

4. Who performs the following duties?

Presents a budget to the Legislature
Appoints members to some boards and commissions
Helps set policies for colleges and universities

   a. Governor
   b. Attorney General
   c. Comptroller of Public Accounts
   d. Agricultural Commissioner

5. How does the State of Texas pay for the services it offers?
   a. Stocks and bonds
   b. Donations
   c. Mutual funds
   d. Taxes and fees

6. What is the largest expense in the Texas budget?
   a. Education
   b. Regulatory services
   c. Judicial system
   d. General provisions

7. Which President of the Republic of Texas faced the following difficulties?

Mexican government refused to recognize Texas's independence
Financial problems
Native Americans resented the growing number of settlers invading their territory

   a. Edward Burleson
   b. Sam Houston
   c. Peter Grayson
   d. John Allen

8. _____ was a Native American leader who refused an order by President Lamar to lead the Cherokees out of Texas.
   a. Quanah Parker
   b. Satanta
   c. Chief Bowles
   d. Sitting Bull

9. Which Texas city protested the sale of the state's Navy?
   a. Galveston
   b. Brownsville
   b. Houston
   d. Nacogdoches

10. How did Jose Antonio Navarro help shape the early history of Texas?
    a. Commanded the Texas Navy
    b. Only Texas-born delegate to the Constitutional Convention in 1845
    c. Built a new town near Harrisburg, named Houston
    d. Served as Secretary of State under Sam Houston

11. Where did President Lamar send General Hugh McLeod and a force of 270 men in an attempt to gain control over their lucrative trail and further develop the trade links between Texas and New Mexico?
    a. Tucson
    b. Bent's Fort
    c. Santa Fe
    d. San Miguel

12. Who was the candidate for President of the United States in 1844 that supported the annexation of Texas?
    a. Martin Van Buren
    b. William Henry Harrison
    c. Henry Clay
    d. James K. Polk

13. The United States Congress approved a joint resolution on February 26, 1845, agreeing to accept Texas as the twenty-eighth state. What is a joint resolution?
    a. The transfer of land from one country to another
    b. Limited the possible uses for each piece of property in a city
    c. A formal ruling passed by both houses of the legislature and intended to become law
    d. Rule by an army instead of the usual civil authorities

14. How do Texans decide who will lead our towns, state and country?
    a. Serving on juries
    b. Getting out and voting
    c. Obeying rules and laws
    d. Paying taxes

15. Organizations that work together to influence lawmakers are called _____.
    a. Commissions   c. Delegates
    b. Trustee   d. Special interest groups

16. Who is the elected official pictured to the right?
    a. Dan Patrick   c. Bert Richardson
    b. Kevin Yeary   d. Scott Walker

17. The Preamble to the Constitution of the Republic of Texas is similar to the Preamble to the Constitution of what country?
    a. Mexico   c. United States
    b. Spain   d. France

18. Which position in the new government of the Republic of Texas required the following qualifications?

Attained the age of 25 years
Citizen of the Republic
Shall have resided in the county or district 6 months preceding the election

    a. Senate   c. Supreme Court Justice
    b. House of Representatives   d. President

19. How long was the term of a member of the Senate in the Republic of Texas?
    a. 3 years   c. 1 year
    b. 2 years   d. 4 years

20. Who was to serve as the President of the Senate in the Republic of Texas?
    a. Chief Justice of the Supreme Court
    b. Pope
    c. Oldest member of the Senate
    d. Vice President of the Republic

21. In the Republic of Texas, the Executive authority of this Government shall be vested in a chief magistrate, who shall be styled _____.
    a. President pro tempore
    b. Mayor of Austin
    c. Sheriff
    d. President of the Republic of Texas

22. Which official was appointed to each district of the Republic by Congress and whose duties, salary, perquisites and terms of office were fixed by law?
    a. District Attorney   c. Sheriff
    b. Clerk   d. Constable

Creation of Counties	
Petition of 100 free male inhabitants	?

23. What requirement finishes the chart on the creation of counties in the Republic?
    a. Shall be one acre
    b. Shall contain 900 square miles
    c. Shall contain 4428 acres
    d. Shall contain 177 acres

24. According to Section 22 of the Bill of Rights of the Constitution of the State of Texas (1876), the following actions define the crime of _____.

Levying war against it
Adhering to its enemies
Giving the enemy aid and comfort

    a. Perjury   c. Treason
    b. Libel   d. Slander

25. Which principle of the United States Constitution is closely related to the "rule of law"?
    a. Limited government   c. Separation of powers
    b. Individual rights   d. Popular sovereignty

"Power should be a check to power"- Baron de Montesquieu, an 18ᵗʰ century French thinker

26. Montesquieu's comment refers to what principle of government?
    a. Republicanism
    b. Checks and balances
    c. Federalism
    d. Limited government

27. _____ helped establish the idea of self-government and majority rule in the colonies.
    a. Wilmot Proviso
    b. California Gold Rush
    c. Mayflower Compact
    d. Crittenden Plan

28. How did the Puritans choose to govern their colony?
    a. Viceroyalty
    b. As a royal colony
    c. Assemblies
    d. Town meetings

29. What title best finishes the following chart?

Virginia Plan
The legislative branch would have two houses
Both houses in the legislature would assign representatives according to state population or wealth

?

New Jersey Plan
The legislature would have one house
Each state would have one vote in the legislature

The Senate would give each state equal representation

House of Representatives would have representation according to state population

    a. New York Compromise
    b. Great Compromise
    c. Georgia Compromise
    d. Pennsylvania Compromise

30. Who proposed the Virginia Plan to the Constitutional Convention?
    a. Thomas Hooker
    b. Patrick Henry
    c. Edmund Randolph
    d. Alexander Hamilton

31. Which Amendment to the United States Constitution guarantees the following freedoms?

Freedom of Religion   Freedom of Speech   Freedom of Press
          Freedom of Assembly   Freedom to Petition

    a. Two
    b. Four
    c. Six
    d. First

32. The _____ Amendment to the United States Constitution deals with the quartering of troops.
   a. Three
   c. Seven
   b. Five
   d. Ten

33. The following are examples of what type of responsibility?

Obeying rules and laws Serving on juries Paying taxes Defending your country when called upon

   a. Personal
   c. Basic freedom
   b. Civic
   d. Personal protection

34. In which Supreme Court case was freedom of speech the issue?
   a. Marbury v. Madison
   c. Schenck v. United States
   b. Plessy v. Ferguson
   d. Gibbons v. Ogden

35. What is a limited government?
   a. Type of government where, through law, some control is placed on leadership's powers
   b. Government in which leaders rule without any restrictions
   c. System of building foreign empires for military and trade advantages
   d. Political agreement between countries to support each other in disputes with other countries

36. _____ is a form of limited government.
   a. Socialism
   c. Dictatorship
   b. Absolute monarchy
   d. Democracy

37. What is a direct democracy?
   a. Government in which a king or queen is the official head of state, but elected officials run the government
   b. People govern themselves by voting individually on issues
   c. Political and social system in which a lord gave land to a noble to work, govern, and defend, in return for the noble's loyalty
   d. Form of government in which one individual ruled as both religious leader and king

38. Which title best completes the diagram?

?
Language Government Food Music Religion
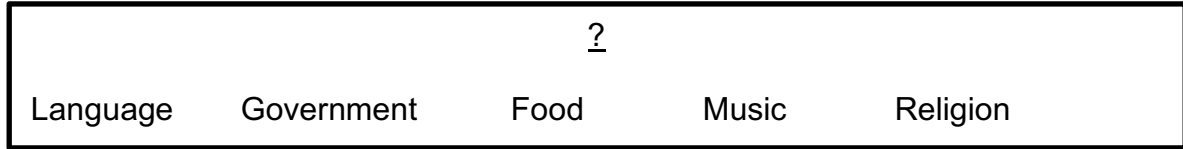
    a. Cooperative   c. Culture
    b. Dynasty   d. Philosophy

39. Our government, economic system and social system have been primarily influenced by the institutions and traditions of-
    a. Asia   c. South America
    b. Africa   d. Europe

40. What has been the greatest contributor to the United States being a leader in satellites, computers, health care and many other fields?
    a. Quality schools   c. Large oil deposits
    b. Large population   d. Moderate climate

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-19 A+ SOCIAL STUDIES
INVITATIONAL TEST — GRADES 7 & 8

Answer Key

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

21. D
22. A
23. B
24. C
25. A
26. B
27. C
28. D
29. B
30. C
31. D
32. A
33. B
34. C
35. A
36. D
37. B
38. C
39. D
40. A

A+ ACADEMICS

University Interscholastic League
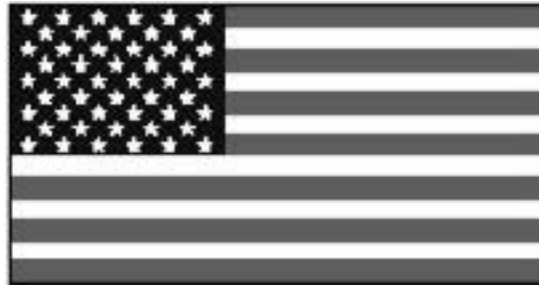
Social Studies
grades 7 & 8

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

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-19 A+ SOCIAL STUDIES
FALL/WINTER DISTRICT TEST — GRADES 7 & 8

1. When Texas joined the United States, its people became subject to the Constitution of the United States, which is based on federalism. What is federalism?
   a. Social reform movement based on improving society through the power of the government
   b. Policy by which stronger nations extend their economic, political or military control over weaker nations or territories
   c. System in which a central government shares power with state governments
   d. Political system in which the king allows nobles the use of his land in exchange for their military service and their protection

"The executive article provided for seven officers- governor, lieutenant governor, secretary of state, comptroller of public accounts, treasurer, commissioner of the land office, and attorney general. All except the secretary of state were to be elected by the voters for a term of two years but with no limitations on eligibility for new terms." Handbook of Texas, Texas Constitution of 1876

2. How does this article about the Texas Constitution reflect the principle of republicanism?
   a. The ability of each branch of government to exercise checks, or controls, over the other branches
   b. A personal liberty and privilege guaranteed to U.S. citizens by the Bill of Rights
   c. A feeling of pride, loyalty, and protectiveness toward one's country
   d. The belief that government should be based on the consent of the people; people exercise their power by voting for political representatives

State Government

Legislative	Executive	Judicial
House, Senate	Governor	?
Makes the laws	Enforces the laws	Interprets the laws

3. What body finishes the above information?
   a. Court system
   b. School system
   c. Speaker of the House
   d. Mayors

> Establishes a budget for the state
> Regulates traffic on state highways
> Decides on qualifications for Texas teachers

4. Which branch of the Texas government performs these duties?
   a. Judicial
   b. Legislative
   c. Religious
   d. Executive

5. What is the largest source of tax revenue for the State of Texas?
   a. Sales
   b. Property
   c. Titles
   d. Licenses

6. How do local districts fund schools in Texas?
   a. Stocks and bonds
   b. Property taxes
   c. Estate taxes
   d. Endowment funds

- Austin became the capital
- Congress set aside over 220,000 acres for two universities
- General Land Office created
- Unsuccessful Santa Fe Expedition

7. Which President of the Republic of Texas faced these issues?
   a. W.S. Peters
   b. Stephen F. Austin
   c. Mirabeau Lamar
   d. Dr. Anson Jones

8. What organization served as a vital part of the defense and trading system of Texas?
   a. Pony Express
   b. Hood's Brigade
   c. Merchant Marines
   d. Navy

9. This Cherokee leader, _____, was attacked by General Kelsey Douglass's militia near the Neches River on July 16, 1839 and killed.
   a. Quanah Parker
   b. Satanta
   c. Sitting Bull
   d. Chief Bowles

10. What is "Star Money"?
    a. Tax placed on imported or exported goods
    b. Paper money, circulated during most of Houston's administration, used to pay government expenses
    c. Crop produced for profit
   d. Government order that stopped or hindered trade during Lamar's administration

11. During annexation talks in 1845, which nation pressured the Mexican government to recognize the independence of Texas?
   a. Poland
   b. Czechoslovakia
   c. France
   d. Russia

12. Who was the President of the Republic of Texas when Texas became the 28th state of the United States?
   a. Dr. Anson Jones
   b. Isaac Van Zandt
   c. Edward Burleson
   d. Sam Houston

13. Trying to persuade legislators to pass or defeat certain laws is called _____.
   a. Due process
   b. Lobbying
   c. Deregulation
   d. Sovereignty

14. Why is it important to be informed about the people and issues on an election ballot?
   a. So qualified leaders may be elected
   b. Leaders are going to pass what they want anyway
   c. Dictatorships don't require an informed citizenry
   d. Freedom of the press is not a constitutional right

15. _____ took office as the State of Texas Attorney General in January 2015.
   a. George P. Bush
   b. Sid Miller
   c. Wayne Christian
   d. Ken Paxton

16. Who does NOT serve as a Justice on the Supreme Court of Texas?
   a. John Devine
   b. Debra Lehrmann
   c. Sharon Keller
   d. Don Willett

> "We, the People of Texas, in order to form a Government, establish justice, ensure domestic tranquility, provide for the common defence and general welfare; and to secure the blessings of liberty to ourselves, and our posterity, do ordain and establish this Constitution." Constitution of the Republic of Texas

17. Where in the Republic of Texas Constitution is this quote?
    a. Article 1
    b. Schedule
    c. Preamble
    d. General Provisions

18. When were the members of the Republic of Texas House of Representatives to be elected?
    a. Second Tuesday of November
    b. First Monday of September
    c. First Saturday in May
    d. Third Monday of December

- **Attained the age of 30 years**
- **Citizen of the Republic**
- **Reside in district for which they are chosen at least one year before the election**

19. Which position in the Republic of Texas government needed to meet these qualifications?
    a. Member of House of Representatives
    b. President
    c. Supreme Court Justice
    d. Senator

20. How many members of the Republic of Texas Senate did it require for a quorum to do its business?
    a. 2/3
    b. Simple majority
    c. 1/4
    d. 3/4

21. No _____ shall be eligible to hold the office of the Executive of the Republic nor to a seat in the Congress.
    a. Minister
    b. Lawyer
    c. Teacher
    d. Farmer
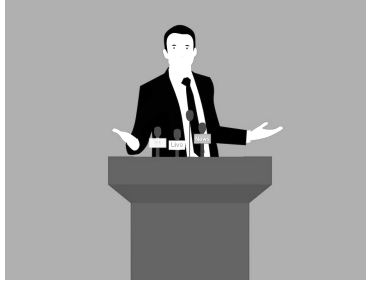
22. What right, according to the Constitution of the State of Texas, is being depicted in the cartoon?
    a. Right to own property
    c. Ability to receive an education
    b. Freedom of speech
    d. Mandated medical insurance

"No bill of attainder, ex post facto law, retroactive law, or any law impairing the obligation of contracts shall be made." Constitution of the State of Texas 1876

23. What is a bill of attainder?
    a. Land to settle on and farm
    b. A written statement issued by a grand jury charging a person with a crime
    c. A law that condemns a person without a trial in court
    d. Income a government collects to cover expenses

24. According to the Constitution of the State of Texas, no person shall ever be imprisoned for _____.
    a. Arson
    c. Murder
    b. Theft
    d. Debt

United States Constitution		
Republicanism	Separation of Powers	?
Popular Sovereignty	Federalism	Checks and Balances
Individual Rights		

25. Which principle of government finishes the chart?
    a. Neutrality
    c. Containment
    b. Nationalism
    d. Limited government

26. What political writer deeply influenced the Framers with the idea of popular sovereignty?
    a. Karl Marx
    c. John Locke
    b. Voltaire
    d. Henry Clay

27. Where in the United States Constitution do we find a guarantee of our individual rights?
   a. Article 2   c. Article 5
   b. Bill of Rights   d. Article 10

28. _____, created in 1619, became the first representative assembly in the American colonies.
   a. House of Burgesses   c. House of Commons
   b. Duma   d. House of Lords

29. Which colony is the only one not founded for religious reasons?
   a. Georgia   c. Maryland
   b. Massachusetts   d. Rhode Island

30. Who proposed the New Jersey Plan to the Constitutional Convention as an alternative to the Virginia Plan?
   a. John Dickinson   c. Thomas Jefferson
   b. William Paterson   d. Robert Morris

31. How did the Constitutional Convention reach a compromise on the issue of slavery?
   a. Banned slavery in the North
   b. Allowed it in only certain states
   c. Total ban after 1808
   d. It did not outlaw slavery and decided no law could be made until 1808

- A well-regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed.

32. This right is guaranteed to the people in which Amendment to the United States Constitution?
   a. Fourth   c. Second
   b. Fifth   d. First

"You have the right to remain silent."

"Anything you say can and will be used against you in a court of law."

"You have the right to an attorney."

33. Which Amendment to the United States Constitution guarantees a person these rights?
   a. Third   c. Fifth
   b. Seventh   d. Tenth

- **"The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people."**

34. What Amendment to the United States Constitution protects these rights of the people?
    a. First
    b. Sixth
    c. Eighth
    d. Ninth

35. One of the most important responsibilities of a U. S. citizen is _____.
    a. Voting
    b. Freedom of peaceful assembly
    c. Freedom to petition the government for change
    d. Freedom of speech

36. Who helped the colonists move toward gaining a new right, freedom of press, by printing a criticism of the governor of New York?
    a. Andrew Jackson
    b. John Peter Zenger
    c. James Wolfe
    d. Alexander Hamilton

37. What type of government does the United States have?
    a. Dictatorship
    b. Absolute monarchy
    c. Representative democracy
    d. Constitutional monarchy

38. Which is NOT a usual custom or belief of people who live in the United States?
    a. Free public education
    b. Nose rub greeting
    c. Freedom of speech
    d. Right to practice the religion of their choosing

39. What is an issue that faces developing nations?
    a. Increased population
    b. Not enough jobs
    c. Poor schools
    d. All of the above

40. Which economic system is sometimes called a "free enterprise system"?
    a. Market
    b. Command
    c. Traditional
    d. Cottage

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-19 A+ SOCIAL STUDIES
FALL/WINTER DISTRICT TEST — GRADES 7 & 8

Answer Key

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

University Interscholastic League

Social Studies
grades 7 & 8

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-19 A+ SOCIAL STUDIES
SPRING DISTRICT TEST — GRADES 7 & 8

> The Governor can veto a law, but the legislature can override the veto with a two-thirds majority.

1. Which principle of government is illustrated in this example from the Texas Constitution?
   a. Individual rights
   c. Limited government
   b. Checks and balances
   d. Federalism

2. Where in the Texas Constitution does it reflect the principle of popular sovereignty?
   a. Article 1 Bill of Rights
   b. Article 2 The Powers of Government
   c. Article 4 Executive Department
   d. Preamble

3. What function does the legislative branch of the Texas government serve?
   a. Makes the laws
   c. Enforces the laws
   b. Interprets the laws
   d. Educates the citizens

> Civil suits
> Divorce cases
> Election appeals

4. Which branch of the Texas government performs these duties?
   a. Legislative
   c. Judicial
   b. Executive
   d. Religious

5. What is the second largest source of revenue for the State of Texas?
   a. Mutual funds
   c. Stocks and bonds
   b. Lottery
   d. Federal funds

6. How are cities in Texas able to pay for the services they provide?
   a. Property and sales taxes
   b. Tolls
   c. Donations
   d. Endowment funds

> Captain in the Texas Rangers
> Military officer during the Republic of Texas
> Served in several armed conflicts from 1836-1848

7. Who was the military leader that served in these positions?
   a. Adrian Woll
   b. Green DeWitt
   c. Jack Coffee Hays
   d. Bose Ikard

8. What meeting, to discuss peace negotiations between soldiers and officials of the Republic of Texas and a delegation of Comanche chiefs in San Antonio in March of 1840, became a lopsided fight?
   a. Archives War
   b. Council House Fight
   c. Grass Fight
   d. Battle of Plum Creek

> ?
>
> Wasted money that Texas did not have
> Increased tensions with Mexico
> Resulted in the loss of lives
> Citizens refused to become part of Texas

9. Which title best completes the list?
   a. Long Expedition
   b. Santa Fe Expedition
   c. Gutierrez-Magee Expedition
   d. Ramon-St. Denis Expedition

10. _____, during his term as President of the Republic of Texas, wanted to clear Texas of all Native Americans to provide more land for Anglo Texans.
   a. Sam Houston
   b. David G. Burnet
   c. Isaac Van Zandt
   d. Mirabeau Lamar

11. What nation offered to recognize the independence of Texas if the Texas Congress would reject annexation to the United States?
   a. Mexico
   b. Ireland
   c. Germany
   d. France

> "The final act in this great drama is now performed. The Republic of Texas is no more."

12. Which President of the Republic of Texas spoke these words at the ceremony for the annexation of Texas?
   a. James Hogg
   b. Lorenzo de Zavala
   c. Dr. Anson Jones
   d. Stephen F. Austin

13. What action can ordinary citizens take to respond to environmental issues our state faces?
    a. Increase lawn watering
    b. Allow more cars on the roads
    c. More use of mass transit
    d. Increase oil supplies

14. Which action is a civic duty of a citizen?
    a. Pay taxes
    b. Know right from wrong
    c. Help your family
    d. Behave in a respectful way

15. _____ has served as the Commissioner of the General Land Office.
    a. Sid Miller
    b. David Newll
    c. Dan Patrick
    d. George P. Bush

16. Who does NOT serve as a Judge on the Texas Court of Criminal Appeals?
    a. Barbara Hervey
    b. Phil Johnson
    c. Mary Lou Keel
    d. Michael Keasler

17. How long was the term of a member of the House of Representatives during the Republic of Texas?
    a. Two years
    b. Four years
    c. Three years
    d. One year

18. Which body of the government during the Republic of Texas had the sole power to try impeachments?
    a. House of Representatives
    b. Senate
    c. President
    d. Supreme Court

19. If in an election for the office of President of the Republic of Texas a tie existed, who was to determine the winner?
    a. House of Representatives
    b. Supreme Court
    c. Senate
    d. Mayor of Austin

20. Nothing but _____ shall be made a lawful tender of the Republic of Texas.
    a. Diamonds
    b. Paper
    c. Gold and silver
    d. Copper

21. Who elected the judges of the supreme and district courts during the Republic of Texas?
    a. President
    b. Congress
    c. People
    d. Pope

Commander-in-chief of the army and navy
Grant pardons and reprieves
Remit fines and forfeitures
Give information on the state of the Republic

22. Which official, during the Republic of Texas, performed these duties?
    a. Vice President
    b. Supreme Court judge
    c. President pro tempore
    d. President

23. During the time of the Republic of Texas, every head of the family was entitled to _____.
    a. A third of one league of land
    b. 40 acres and a mule
    c. One league and labor of land
    d. One acre

24. What is NOT ever to be required as a qualification to hold any office in the State of Texas?
    a. Religious test
    b. Age
    c. Residence requirement
    d. Citizenship
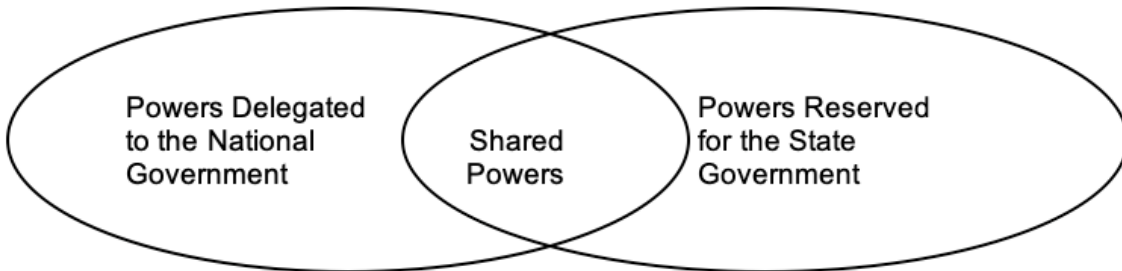
25. Which principle of government is illustrated in the diagram?
    a. Federalism
    b. Checks and balances
    c. Republicanism
    d. Nationalism

26. How did the Framers of the United States Constitution avoid the problem of too much power falling into the hands of a single group?
    a. Limited government
    b. Individual rights
    c. Separation of powers
    d. Popular sovereignty

27. What is the Mayflower Compact?
    a. A law that established a plan for surveying and selling the federally owned lands west of the Appalachian Mountains
    b. An agreement for the sake of order established by men who had sailed to America, called for laws for the good of the colony and set forth the idea of self-government
    c. Law offered 160 acres of land to anyone who agreed to live on and improve the land for five years
    d. The United States asked nations involved in Asia to follow a policy in which no one country controlled trade with China

28. The Great Compromise has also been referred to as the _____.
    a. New York Compromise
    b. Pennsylvania Compromise
    c. Georgia Compromise
    d. Connecticut Compromise

29. What is the Three-Fifths Compromise?
    a. Made it illegal for corporations to gain control of industries by forming trusts
    b. Series of laws enacted to maintain the balance of power between the slave states and free states
    c. Agreement that resolved an 1876 election dispute
    d. The Constitutional Convention's agreement to count a proportion of a state's slaves as population for purposes of representation and taxation

30. Throughout the United States, school officials claim the authority to search student lockers. Students often claim this violates which Amendment to the United States Constitution?
    a. Ninth
    b. Fourth
    c. Second
    d. Sixth

31. The Third Amendment to the United States Constitution deals with the quartering of troops. What is quartering?
    a. A method of punishment
    b. Money paid by arrested persons to guarantee they will return for trial
    c. Given a place to stay
    d. Revolt against authority

> Nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb
> Nor shall be compelled in any criminal case to be a witness against himself
> Nor shall private property be taken for public use, without just compensation

32. Which Amendment to the United States Constitution protects these rights of a person?
    a. Fifth
    b. Seventh
    c. First
    d. Eighth

33. What was the first major challenge to the authority of the federal government?
    a. Whiskey Rebellion
    b. Glorious Revolution
    c. Doctrine of Nullification
    d. Stono Rebellion

34. Why is obeying the law an important responsibility of citizens?
    a. To gain an economic advantage
    b. Create chaos
    c. For their protection
    d. Feeling of superiority

35. How can governments set limits on how much power government officials have so they cannot take advantage of the people?
    a. Globalization
    b. Constitutions
    c. Castes
    d. Philosophy

36. Which type of government is an unlimited government?
    a. Democracy
    b. Direct democracy
    c. Constitutional monarchy
    d. Dictatorships

37. Who makes the laws that people need in order to live together without conflict?
    a. Teachers
    b. Business leaders
    c. Neighbors
    d. Governments

38. An economic system is _____.
    a. Act or process of gaining knowledge
    b. The different ways people and nations go about meeting their daily needs
    c. Information that comes from an eye witness
    d. Individual feature of the land

39. What is religion?
   a. Group of people in charge of or ruling or managing a country
   b. The way a country produces, divides up, and uses its money and goods
   c. Belief in or worship of God, or gods
   d. The study of Earth's land and how people use it

40. Which country did not allow girls to go to school because of their strict religious laws?
   a. Afghanistan
   c. Canada
   b. Switzerland
   d. France

UNIVERSITY INTERSCHOLASTIC LEAGUE
2018-19 A+ SOCIAL STUDIES
SPRING DISTRICT TEST — GRADES 7 & 8

Answer Key

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