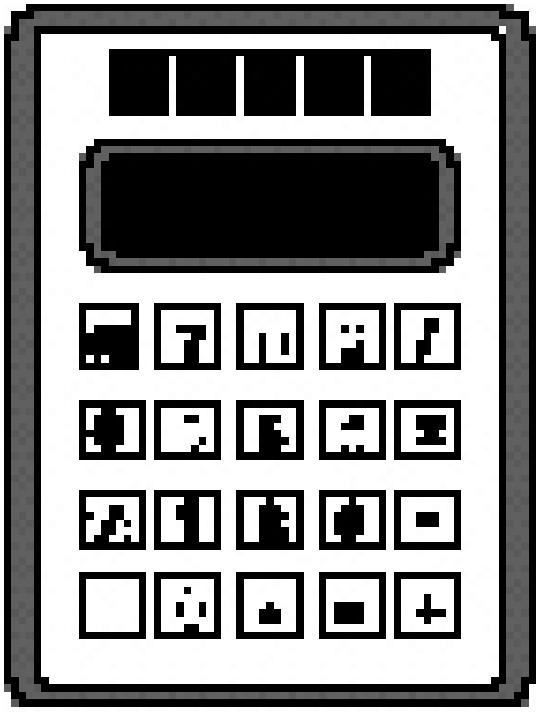
INVITATIONAL 2023-2024

A+ ACADEMICS

University Interscholastic League



Calculator Applications

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

2023 – 2024 UIL MS Calculator Test A

24A–1. –5410 – 7000 ---------- 1=_____

24A–2. 77 – 8 – 10 ---------- 2=_____

24A–3. 81 + 553 + 379 ---------- 3=_____

24A–4. 39 – 41 – 22 – 31 ---------- 4=_____

24A–5. 2510 – 7510 – 7260 – 3740 ---------- 5=_____

24A–6. 355 – 88.9 – 505 – 211 + 487 ---------- 6=_____

24A–7. 4.38 – 0.983 + 2.5 – 6.24 – 2.61 ---------- 7=_____

24A–8. 1.68 + 0.626 + 1.24 + 2.32 + 0.592 ---------- 8=_____

24A–9. 568 x 414 x 662 ---------- 9=_____

24A–10. 40.9 x 70.2 x 292 x 20.4 ---------- 10=_____

24A–11. Twenty-four point eight added to sixteen and one-third equals what number?---------- 11=_____

24A–12. Two pi minus the positive square root of 10.5 equals a number. What is the number? ---------- 12=_____

24A–13. A bin containing mixed taffy candy had an advertised price for the candy, of $5.99 per pound. If the scale that weighed the candy I bought reads 2.18 pounds, how much did the candy cost excluding the state sales tax? ---------- 13=$_____

24A–14. $(503)[651 \times 212/297]$ ---------- 14=_____

24A–15. $(53/269)[390 - 411]$ ---------- 15=_____

24A–16. $\left[\frac{194}{211}\right][(123/182) - 0.377]$ ---------- 16=_____

24A–17. $(465 + 523)[410 - 200 - 598]$ ---------- 17=_____

24A–18. $\frac{(503/474) + (354/88)}{(0.0119 - 0.00498)}$ ---------- 18=_____

24A–19. $\left[\frac{52/132}{331/138}\right]\{0.0024 + 0.003 - 0.00514\}$ ---------- 19=_____

24A–20. $\frac{327}{(83 - 362)} - \frac{(150 - 206)}{250}$ ---------- 20=_____

24A–21. $\frac{0.00508 + 0.00443 + 0.00495}{(0.00115)(3.75 \times 10^{-4})(3.73 \times 10^{-5})}$ ---------- 21=_____

24A–22. $\left[\frac{1520 + 1610}{1470 - 2030}\right]\left[\frac{4010}{4100}\right]$ ---------- 22=_____

24A–23. $\frac{(2530 \times 3130)/1260}{(3450 \times 5.58 \times 10^{-5}) + 0.0819}$ ---------- 23=_____

24A–24. If Texas was granted statehood in 1845, for how many years has Texas been a state by 2023? ---------- 24=_____ yrs (integer)

24A–25. The distance from Harlingen to Austin is 326.1 miles, via US 77 North and Interstate 37 North. How long does it take to drive that distance if I drive an average of 61 miles per hour?---------- 25=_____ hrs

24A–26. If ticket prices at a Texas Rangers baseball game are starting at $17 and premium tickets cost $906, how much does it cost to buy five of the cheaper tickets plus three premium tickets including a state sales tax of 8½%? ---------- 26=$_____

24A–27. $(14.5)[(0.0341/0.0178)(0.128 + 0.184)]$ ---------- 27=_____

24A–28. $\dfrac{(7.35 + 7.31)(101 + 36)}{(2.94\text{x}10^{10})}$ ---------- 28=_____

24A–29. $(0.556)[(477/467)(359/247)]$ ---------- 29=_____

24A–30. $(1.48)\left[(7.87\text{x}10^{10}) - (3.38\text{x}10^{10})\right]$ ---------- 30=_____

24A–31. $(0.00775)\left[\dfrac{0.00212}{(5.69\text{x}10^{9})}\right]$ ---------- 31=_____

24A–32. $\dfrac{(0.438 + 0.318)}{(6.94\text{x}10^{12})}$ ---------- 32=_____

24A–33. $\dfrac{1}{642} - \dfrac{1}{(691 + 174)}$ ---------- 33=_____

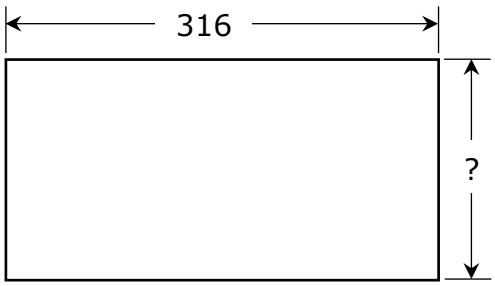
24A–34. $1/(0.782 - 0.393) - 1/(0.367)$ ---------- 34=_____

24A–35. In a black bag there are 18 blue, 21 green, 11 yellow and 19 red marbles. What is the probability of randomly picking a red one? 35=_____

24A–36. It took 5 minutes and 23 seconds to drain one pint of blood from my arm during my blood donation. At what rate was the blood draining out of my arm?---------- 36=_____ oz/min

24A-37.

RECTANGLE

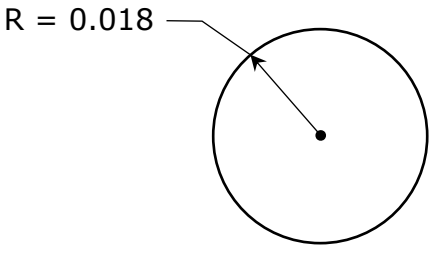


Rectangle Area = 66500

24A-37=_____

24A-38.

CIRCLE



Circumference = ?

24A-38=_____

24A–39. $\sqrt{\dfrac{1.2 + 1.15}{227 - 137}}$ ---------- 39=_____

24A–40. $\dfrac{(11300 + 11200)^3}{(0.137 - 0.0487)^2}$ ---------- 40=_____

24A–41. $(2.91 + 1.01)^2(0.614 + 0.601)^2$ ---------- 41=_____

24A–42. $\sqrt{388} + \sqrt{384 + 257} - (\pi)\sqrt{55.8}$ ---------- 42=_____

24A–43. $\sqrt{(65/410) + 0.146 - 0.0888}$ ---------- 43=_____

24A–44. $(1/\pi)\sqrt[4]{\dfrac{0.00325 + 0.00295}{0.229 - 0.0641}}$ ---------- 44=_____

24A–45. $\dfrac{1}{\sqrt{1480 + 3060 + 1490}} + \left(\dfrac{1}{\sqrt{6.15}}\right)^4$ ---------- 45=_____

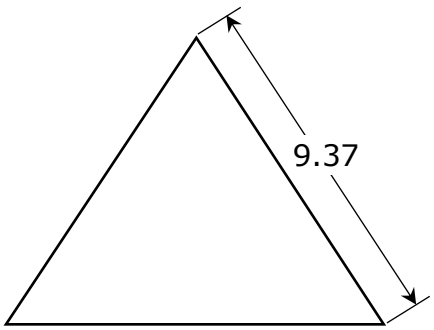
24A–46. $(129)\sqrt{77900 + 53500 - 49000}$ ---------- 46=_____

24A–47. If an oatmeal raisin cookie recipe calls for 1½ teaspoons of ground cinnamon and makes 28 cookies, how many teaspoons (tsp) of ground cinnamon are needed to make 100 cookies? ---------- 47=_____tsp

24A–48. Noah walked 100 ft due north, stopped and then walked due west to a spot where he picked up a dollar bill on the ground. He then walked straight back 130 ft to where he started from. How far did Noah walk due west? ---------- 48=_____ft

24A-49.

EQUILATERAL TRIANGLE

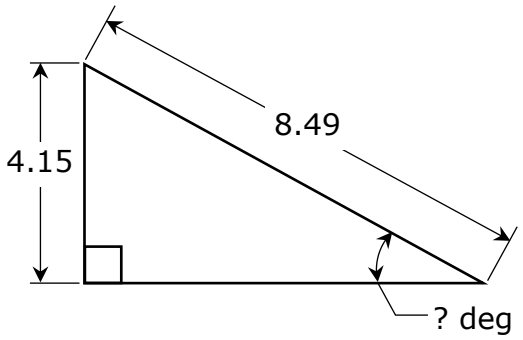


Area = ?

24A-49=_____

24A-50.

RIGHT TRIANGLE



24A-50=_____

24A–51. $\left[\dfrac{9.91 + 13.4 + \sqrt{131 + 396}}{22.5/23.3}\right]^3$ ---------- 51=_____

24A–52. $\dfrac{(7490 + 8700 - 5710)^4}{\sqrt{24000 + 14000 + 15000}}$ ---------- 52=_____

24A–53. $\dfrac{\sqrt{1.83 + \pi + 2.89}}{(33 - 29.2 + 21.8)^3}$ ---------- 53=_____

24A–54. $\sqrt{\dfrac{(8.01\text{x}10^5)(1.72\text{x}10^5)}{(9200)(3.09\text{x}10^5)}} - 1.85 + 2.34$ ---------- 54=_____

24A–55. $(540)^2\sqrt{(2.89)/(50.7)} - (22400 + 29800)$ ---------- 55=_____

24A–56. $\sqrt{\dfrac{1/(275 - 149)}{(52.1)(3.71 + 6.09)^5}}$ ---------- 56=_____

24A–57. $\sqrt{\dfrac{(124)(108)}{(1450) + (5420)}} - 1.5$ ---------- 57=_____

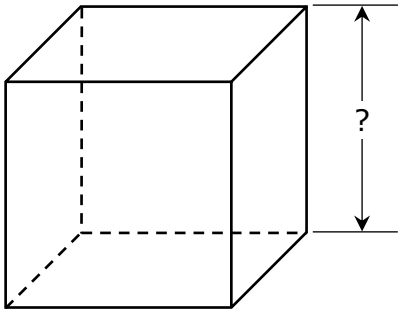
24A–58. (deg) $\tan(240^\circ) + (608/1710)$ ---------- 58=_____

24A–59. Body mass index (BMI) is a person's "weight", in kilograms, divided by the square of height in meters. If Mike weighs 104.5 kilograms and is 1.918 meters tall, what is Mike's BMI?---------- 59=_____ Kg/m^2

24A–60. The turning force (centripetal force), acting on a object to make an object turn can be defined as the product of the mass of an object by the ratio of its speed squared to the radius of the circle turned. If the mass of an object is in kilograms, its speed is in meters/second and the radius of the circle turned is in meters, then the units of centripetal force are in Newtons (N). What is the centripetal force acting on Mackenzie, whose mass is 38.2 kilograms, and is moving in a circle of radius 25 meters with a speed of 15 meters/second?---------- 60=_____ N

24A-61.

SOLID CUBE

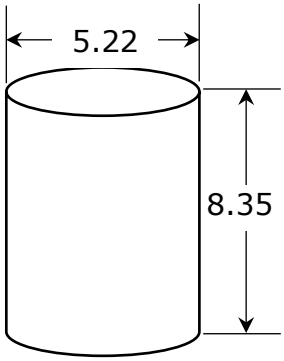


Surface Area = 0.00832

24A-61=_____

24A-62.

RIGHT CYLINDER



Volume = ?

24A-62=_____

24A–63. $\frac{14! + 16!}{19!}$ ---------- 63=_____

24A–64. (deg) (171 – 240)tan(92.3°) ---------- 64=_____

24A–65. (deg) (3760 + 2960)sin(4.1°) ---------- 65=_____

24A–66. (rad) $\sin\left[\frac{(69.9)(\pi)}{(2.03)(120)}\right]$ ---------- 66=_____

24A–67. (rad) $\frac{\tan(32.8)}{243/347}$ ---------- 67=_____

24A–68. (rad) cos[(2.21 – 1.21)(17.8)] ---------- 68=_____

24A–69. (deg) $\frac{\sin(4.41°) - \tan(4.41°)}{\sin(4.41°)}$ ---------- 69=_____

24A–70. $(113 + 211 + 89.7)^{3/5}$ ---------- 70=_____

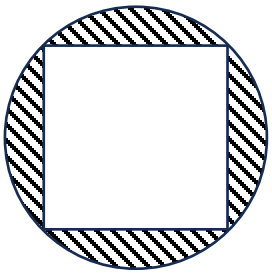
24A–71. How much water is in a pipe that is one inch in inside diameter and ¼ mile long? (Recall 231 in^3 = 1 gallon.) ---------- 71=_____gal

24A–72. Dan guessed that a board was 3 ft long. The board's length is actually 40 inches long. What is the percent error in Dans guess? --- 72=_____%

24A-73.

SQUARE AND CIRCLE

Square Area = 100

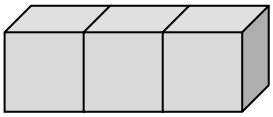


Shaded Area = ?

24A-73=_____

24A-74.

IDENTICAL CUBES



Exposed Surface Area = 100

Total Volume = ?

24A-74=_____

24A–75. $\text{Ln}\left[\frac{104 + 44.2 + 197}{463 + 415 - 301}\right]$ ---------- 75=_____

24A–76. $\frac{(27.2)^{0.652}(0.517)^{0.731}}{(8.26 - 6.52)^{-11}}$ ---------- 76=_____

24A–77. $(41100)10^{(0.371)(6.7)}$ ---------- 77=_____

24A–78. $\frac{\text{Log}[584 + (6.46)(112)]}{1.83 + \text{Log}[3400 + 6340]}$ ---------- 78=_____

24A–79. $1 + 2 + 3 + \ldots + 843$ ---------- 79=_____

24A–80. $\frac{1}{(0.75)} + \frac{1}{3(0.75)^3} + \frac{1}{5(0.75)^5} + \frac{1}{7(0.75)^7}$ ---------- 80=_____

2023 – 2024 UIL MS Calculator Test A Answer Key

24A-1 = -12400
= -1.24×10^{4}

24A-2 = 59.0
= 5.90×10^{1}

24A-3 = 1010
= 1.01×10^{3}

24A-4 = -55.0
= -5.50×10^{1}

24A-5 = -16000
= -1.60×10^{4}

24A-6 = 37.0
= 3.70×10^{1}

24A-7 = -2.95
= -2.95×10^{0}

24A-8 = 6.46
= 6.46×10^{0}

24A-9 = 1.56×10^{8}

24A-10 = 1.71×10^{7}

24A-11 = 41.1
= 4.11×10^{1}

24A-12 = 3.04
= 3.04×10^{0}

24A-13 = 13.06
Dollar Answer

24A-14 = 234000
= 2.34×10^{5}

24A-15 = -4.14
= -4.14×10^{0}

24A-16 = 0.275
= 2.75×10^{-1}

24A-17 = -383000
= -3.83×10^{5}

24A-18 = 735
= 7.35×10^{2}

24A-19 = 4.27×10^{-5}

24A-20 = -0.948
= -9.48×10^{-1}

24A-21 = 8.99×10^{8}

24A-22 = -5.47
= -5.47×10^{0}

24A-23 = 22900
= 2.29×10^{4}

24A-24 = 178
Integer Answer

24A-25 = 5.35
= 5.35×10^{0}

24A-26 = 3041.26
Dollar Answer

24A-27 = 8.67
= 8.67×10^{0}

24A-28 = 6.83×10^{-8}

24A-29 = 0.825
= 8.25×10^{-1}

24A-30 = 6.65×10^{10}

24A-31 = 2.89×10^{-15}

24A-32 = 1.09×10^{-13}

24A-33 = 0.000402
= 4.02×10^{-4}

24A-34 = -0.154
= -1.54×10^{-1}

24A-35 = 0.275
= 2.75×10^{-1}

24A-36 = 2.97
= 2.97×10^{0}

24A-37 = 210
= 2.10×10^{2}

24A-38 = 1.13
= 1.13×10^{0}

2023 – 2024 UIL MS Calculator Test A Answer Key

24A-39 = 0.162
= 1.62×10^{-1}

24A-40 = 1.46×10^{15}

24A-41 = 22.7
= 2.27×10^{1}

24A-42 = 21.5
= 2.15×10^{1}

24A-43 = 0.464
= 4.64×10^{-1}

24A-44 = 0.140
= 1.40×10^{-1}

24A-45 = 0.0393
= 3.93×10^{-2}

24A-46 = 37000
= 3.70×10^{4}

24A-47 = 5.36
= 5.36×10^{0}

24A-48 = 83.1
= 8.31×10^{1}

24A-49 = 38.0
= 3.80×10^{1}

24A-50 = 29.3
= 2.93×10^{1}

24A-51 = 110000
= 1.10×10^{5}

24A-52 = 5.24×10^{13}

24A-53 = 0.000167
= 1.67×10^{-4}

24A-54 = 7.45
= 7.45×10^{0}

24A-55 = 17400
= 1.74×10^{4}

24A-56 = 4.11×10^{-5}

24A-57 = -0.104
= -1.04×10^{-1}

24A-58 = 2.09
= 2.09×10^{0}

24A-59 = 28.4
= 2.84×10^{1}

24A-60 = 344
= 3.44×10^{2}

24A-61 = 0.0372
= 3.72×10^{-2}

24A-62 = 179
= 1.79×10^{2}

24A-63 = 0.000173
= 1.73×10^{-4}

24A-64 = 1720
= 1.72×10^{3}

24A-65 = 480
= 4.80×10^{2}

24A-66 = 0.784
= 7.84×10^{-1}

24A-67 = 7.56
= 7.56×10^{0}

24A-68 = 0.498
= 4.98×10^{-1}

24A-69 = -0.00297
= -2.97×10^{-3}

24A-70 = 37.2
= 3.72×10^{1}

24A-71 = 53.9
= 5.39×10^{1}

24A-72 = -10.0
= -1.00×10^{1}

24A-73 = 57.1
= 5.71×10^{1}

24A-74 = 57.3
= 5.73×10^{1}

24A-75 = -0.514
= -5.14×10^{-1}

24A-76 = 2350
= 2.35×10^{3}

24A-77 = 1.26×10^{7}

24A-78 = 0.536
= 5.36×10^{-1}

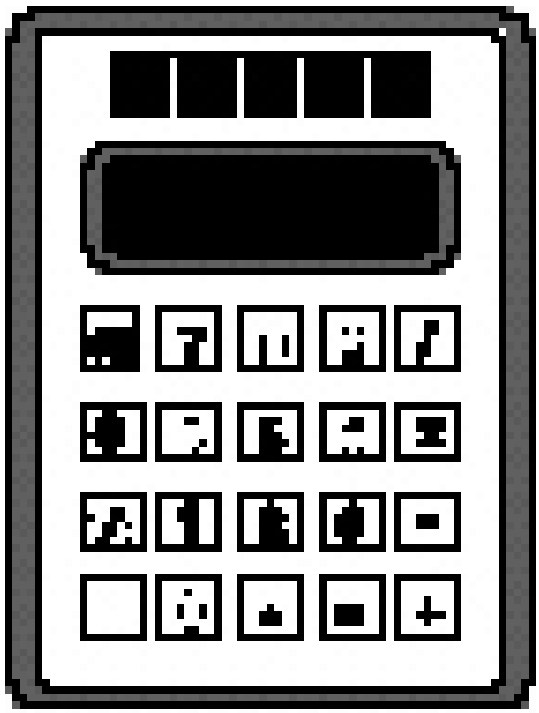
24A-79 = 356000
= 3.56×10^{5}

24A-80 = 4.04
= 4.04×10^{0}

FALL/WINTER DISTRICT 2023-2024

A+ ACADEMICS

University Interscholastic League



Calculator Applications

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

2023 – 2024 UIL MS Calculator Test B

24B–1. 3880 – 3520 ---------- 1=_____

24B–2. 32 – 21 + 51 ---------- 2=_____

24B–3. 3.9 + 18.2 + π ---------- 3=_____

24B–4. 42 – 81 – 76 – 26 ---------- 4=_____

24B–5. –101 – 304 – 345 + 220 ---------- 5=_____

24B–6. –213 – 375 – 518 + 206 + 331 ---------- 6=_____

24B–7. (–0.594 + 1.12 – 1.24) – (1.14 + 0.587) ---------- 7=_____

24B–8. (–2.93 – 0.749) + (1.12 – 0.719 – 0.997) ---------- 8=_____

24B–9. 157 x 128 x 21 ---------- 9=_____

24B–10. 2950 x 2660 x 217 x 5820 ---------- 10=_____

24B–11. What is the product of nine and two-thirds and the negative square root of sixty-nine? ---------- 11=_____

24B–12. What is the sum of the number of days in the months of September, March, and October? ---------- 12=_____ days (Integer)

24B–13. A take-out menu for barbeque listed a brisket sandwich for $11.65, a French-fry basket for $5.65, a bowl of pinto beans for $2.95, a bowl of corn for $2.25, a Texas Pecan Pie dessert for $4.95 and a soft drink for $2. If Andy ordered one of each item listed, how much did he pay for all these items, excluding state sales tax? ---------- 13=$_____

24B–14. (155)[140 x 121/181] ---------- 14=_____

24B–15. (373/285)[602 – 616] ---------- 15=_____

24B–16. {(55)(29 – 40)(112)} – 31600 ---------- 16=_____

24B–17. $\left[\frac{117}{145}\right]$[(128/34) + 2.6] ---------- 17=_____

24B–18. $\left[\frac{(2100/2410) - (2130/3750)}{30.4/12.1}\right]$ ---------- 18=_____

24B–19. $\frac{[0.00377/(0.00414)]/0.0209}{(0.00171 \times 0.00155)(0.00837)}$ ---------- 19=_____

24B–20. $(0.00647)[93/133 \times 99/128] - 5.61\times10^{-4}$ ---------- 20=_____

24B–21. $\frac{5470 + 1790 + 4610}{(11.5)(0.00934)(48.8)}$ ---------- 21=_____

24B–22. $\frac{[-(1300 + 1000)(1100 - 274)]}{(6.54\times10^{-4}/(0.0594))}$ ---------- 22=_____

24B–23. $\left[\frac{470 + 477}{192 - 293}\right]\left[\frac{262}{1290}\right]$ ---------- 23=_____

24B–24. If the University Interscholastic League was founded in 1910, how old is the UIL in 2023? ---------- 24=_____yrs (Integer)

24B–25. Albert is riding his bicycle at an average speed of 6.25 miles per hour. In the distance he sees his daughter, Mackenzie, and reaches her in 2½ minutes. How far away from Mackenzie was Albert when he first spotted her?---------- 25=_____feet

24B–26. A social media app called Threads had 30.6 million users within one day of its initial release by the Facebook's parent company, Meta. What was the average rate of new users joining Threads? ------- 26=_____users/min

24B–27. $[3870 - (1640 + 1510)] + [(-0.0549)(2640 - 6070)]$ --- 27=_____

24B–28. $(0.852)\left[(37/58.6)(3.05\text{x}10^{-4} + 0.00254)\right]$ ---------- 28=_____

24B–29. $(90.5)[(0.0088/0.0157)(178/310)]$ ---------- 29=_____

24B–30. $[1.9]\left[\frac{1/0.823}{1/0.977}\right]$ ---------- 30=_____

24B–31. $(28.7)\left[(3.83\text{x}10^{9}) - (1.75\text{x}10^{9})\right]$ ---------- 31=_____

24B–32. $\frac{1}{792} + \frac{1}{(\pi)(384 - 129)}$ ---------- 32=_____

24B–33. $1/(0.0518 - 0.033) - 1/(0.0084)$ ---------- 33=_____

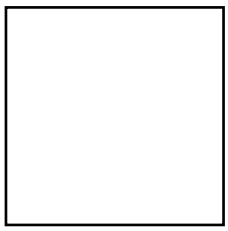
24B–34. $\frac{1}{170} - \frac{1}{55.2} + \frac{1}{126}$ ---------- 34=_____

24B–35. Within a gym class there are 23 students that weigh between 75 and 100 pounds, 18 students that weigh between 101 and 125 pounds, 17 students that weigh between 126 and 150 pounds and 6 students that weigh more than 151 pounds. What is the probability of randomly selecting a student that weighs 119 pounds? ---------- 35=_____

24B–36. If the distance from DFW Airport to Dulles International Airport is 1,172 miles and my airplane fight takes 2 hours 32 minutes to fly that distance, what is my plane's average speed?---------- 36=_____mph

24B-37.

SQUARE



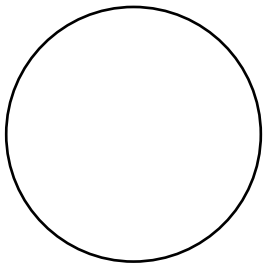
Perimeter = 3.61×10^{12}

Square Area = ?

24B-37=_____

24B-38.

CIRCLE



Circumference = 0.00825

Circle Area = ?

24B-38=_____

24B–39. $\left[\dfrac{9600 + (1/(2.47\text{x}10^{-4}))}{(3740/4520) - 0.311}\right]^2$ ---------- 39=_____

24B–40. $\dfrac{(56400 + 36600)^3}{(0.0275 - 0.0189)^2}$ ---------- 40=_____

24B–41. $\left[\dfrac{30.9}{16.5}\right](25.6 + 18.5)^4$ ---------- 41=_____

24B–42. $(1/\pi)\sqrt[3]{\dfrac{0.0167 + 0.0586}{0.0144 - 0.00603}}$ ---------- 42=_____

24B–43. $\sqrt{8990 - 7650 + 8730} - \sqrt{4000}$ ---------- 43=_____

24B–44. $\sqrt{43.6} + \sqrt{24.5 + 64.8} - (\pi)\sqrt{47.5}$ ---------- 44=_____

24B–45. $\left[\sqrt{(64.6/156)(810)}\right]^3$ ---------- 45=_____

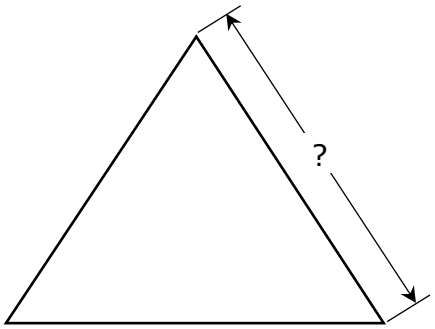
24B–46. $(2220)\sqrt[3]{9880 + 2920 - 2440}$ ---------- 46=_____

24B–47. A typical 1.69-ounce bag of candies contains 56 candies. A "pi" bag of 3.14 ounces should hold at most how many candies (cnd)?----- 47=_____cnd (Integer)

24B–48. A 25-ft long rope is attached to the top of a 18-ft tall pole. If the rope stretched taut so that it touches the ground, at what acute angle to the ground does the rope make?---------- 48=_____°

24B-49.

EQILATERAL TRIANGLE

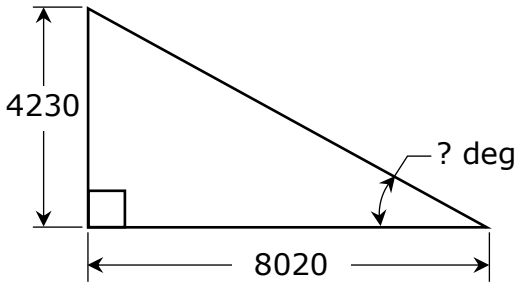


Area = 503000

24B-49=_____

24B-50.

RIGHT TRIANGLE



24B-50=_____

24B–51. $\dfrac{\sqrt{5.17 + \pi + 3.18}}{(1290 - 4620 + 2140)^2}$ ---------- 51=_____

24B–52. $\dfrac{(0.823 + 0.244 - 0.82)^2}{\sqrt{7.79 + 13.9 + 16.3}}$ ---------- 52=_____

24B–53. $\sqrt{\dfrac{56.7}{(1.15)(0.45)}} + \dfrac{(3570 - 2980)}{(21.8 + 17.9)}$ ---------- 53=_____

24B–54. $\sqrt{\dfrac{(7540)(6340)}{(2.97\text{x}10^5)(58200)}} - 0.034 + 0.0429$ ---------- 54=_____

24B–55. $(18.8)^2 \sqrt{(93.8)/(84.1)} - (164 + 260)$ ---------- 55=_____

24B–56. $(67.1)(2.29\text{x}10^9)^{1/3} - [(40900)(3.34\text{x}10^5)]^{1/2}$ ---------- 56=_____

24B–57. (deg) $\tan(163^\circ) + (15.6/31.6)$ ---------- 57=_____

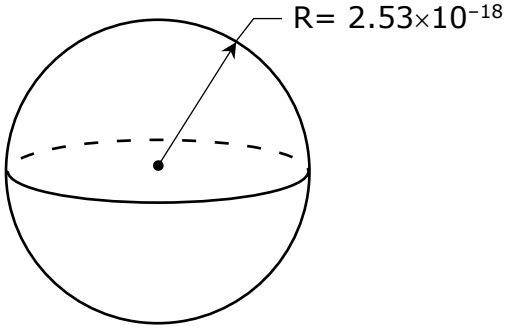
24B–58. $\sqrt{\dfrac{(6.43)(74.6)}{(2910) + (1230)}} + 1/(0.583)^{-2}$ ---------- 58=_____

24B–59. The coefficient of friction, μ, can be defined as the ratio of the motion-opposing frictional force parallel to the object's surface in contact, to the normal, or perpendicular, force between an object's surface. If μ for rubber against concrete is 0.75 and a solid rubber block with a normal force (weight) of 2.75 pounds is rubbing against a concrete floor, what is the frictional force opposing the blocks motion? 59=_____ Lbs.

24B–60. A car traveling with an average speed of 65 miles per hour (mph) is just behind and starting to pass a car traveling with an average speed of 63 mph in the lane next to it. If the faster car has a length of 24-ft and the slower car has a length of 15.4-ft, how long does it take the faster car to pass the slower car so that its back end is 25-ft ahead of the front end of the slower car?---------- 60=_____ sec

24B-61.

SPHERE

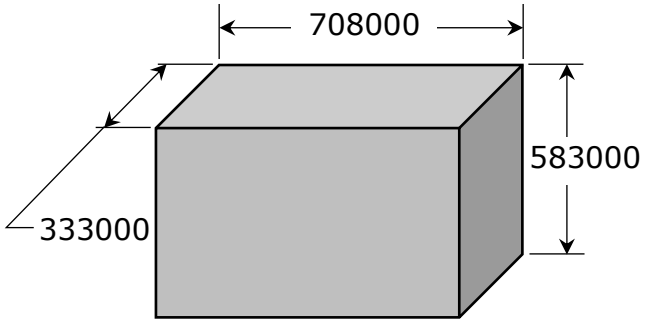


Volume = ?

24B-61=_____

24B-62.

RECTANGULAR SOLID BOX



Total Surface Area = ?

24B-62=_____

24B–63. $\frac{8! - 6!}{5!}$ ---------- 63=_____

24B–64. (deg) (20.5 – 36)tan(14.2°) ---------- 64=_____

24B–65. (deg) $\frac{\tan(1.12°)}{1270}$ ---------- 65=_____

24B–66. (deg) [468]cos(11.8° – 14.2°) ---------- 66=_____

24B–67. (rad) $\frac{\sin(495)}{2040/57.8}$ ---------- 67=_____

24B–68. (deg) $\frac{\sin(387°)}{\tan(387°)}$[99.1] ---------- 68=_____

24B–69. (deg) $\frac{\cos(406°)}{175 + 219}$ ---------- 69=_____

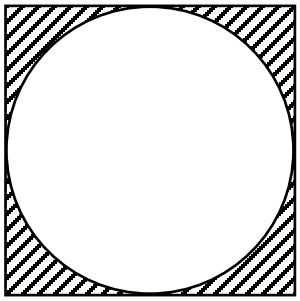
24B–70. $(74.1 + 74.2 + 81.1)^{4/5}$ ---------- 70=_____

24B–71. A rectangular box-shaped aquarium measures 20” by 10” by 12”. How many gallons of water will it hold?---------- 71=_____gal

24B–72. Mike predicted it would take 2¾ cubic yards of concrete to build a small concrete pad. If it actually took 2½ cubic yards, what was Mike’s percent error in his prediction? ---------- 72=_____%

24B-73.

SQUARE AND CIRCLE



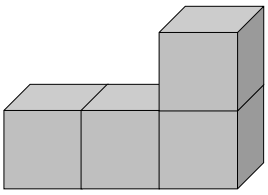
Circle Area = 7.46

Shaded Area = ?

24B-73=_____

24B-74.

IDENTICAL CUBES



Total Volume = 100

Total Exposed Surface Area = ?

24B-74=_____

24B–75. $\frac{\text{Log}(2.04\text{x}10^{11} + 5.78\text{x}10^{11})}{24.9}$ ---------- 75=_____

24B–76. $\frac{(0.487)^{0.425}(12.3)^{0.51}}{(8.14 - 4.89)^{-5}}$ ---------- 76=_____

24B–77. $2\text{Log}\sqrt{\frac{(23.9)(306)}{85.2 + 85}}$ ---------- 77=_____

24B–78. $(0.381)^{\pi}(0.0565)^{4}(3.12 - 2.74)^{5}$ ---------- 78=_____

24B–79. $4 + 6 + 8 + \ldots + 370$ ---------- 79=_____

24B–80. $-\frac{1}{(8.69)} + \frac{1}{3(8.69)^3} - \frac{1}{5(8.69)^5} + \frac{1}{7(8.69)^7}$ ---------- 80=_____

2023 – 2024 UIL MS Calculator Test B Answer Key

24B-1 = 360
= 3.60×10^{2}

24B-2 = 62.0
= 6.20×10^{1}

24B-3 = 25.2
= 2.52×10^{1}

24B-4 = -141
= -1.41×10^{2}

24B-5 = -530
= -5.30×10^{2}

24B-6 = -569
= -5.69×10^{2}

24B-7 = -2.44
= -2.44×10^{0}

24B-8 = -4.27
= -4.27×10^{0}

24B-9 = 422000
= 4.22×10^{5}

24B-10 = 9.91×10^{12}

24B-11 = -80.3
= -8.03×10^{1}

24B-12 = 92
Integer Answer

24B-13 = $29.45
Dollar Answer

24B-14 = 14500
= 1.45×10^{4}

24B-15 = -18.3
= -1.83×10^{1}

24B-16 = -99400
= -9.94×10^{4}

24B-17 = 5.14
= 5.14×10^{0}

24B-18 = 0.121
= 1.21×10^{-1}

24B-19 = 1.96×10^{9}

24B-20 = 0.00294
= 2.94×10^{-3}

24B-21 = 2260
= 2.26×10^{3}

24B-22 = -1.73×10^{8}

24B-23 = -1.90
= -1.90×10^{0}

24B-24 = 113
Integer Answer

24B-25 = 1380
= 1.38×10^{3}

24B-26 = 21300
= 2.13×10^{4}

24B-27 = 908
= 9.08×10^{2}

24B-28 = 0.00153
= 1.53×10^{-3}

24B-29 = 29.1
= 2.91×10^{1}

24B-30 = 2.26
= 2.26×10^{0}

24B-31 = 5.97×10^{10}

24B-32 = 0.00251
= 2.51×10^{-3}

24B-33 = -65.9
= -6.59×10^{1}

24B-34 = -0.00430
= -4.30×10^{-3}

24B-35 = 0.281
= 2.81×10^{-1}

24B-36 = 463
= 4.63×10^{2}

24B-37 = 8.15×10^{23}

24B-38 = 5.42×10^{-6}

2023 – 2024 UIL MS Calculator Test B Answer Key

24B-39 = 6.98×10^{8}

24B-40 = 1.09×10^{19}

24B-41 = 7.08×10^{6}

24B-42 = 0.662
= 6.62×10^{-1}

24B-43 = 37.1
= 3.71×10^{1}

24B-44 = -5.60
= -5.60×10^{0}

24B-45 = 6140
= 6.14×10^{3}

24B-46 = 48400
= 4.84×10^{4}

24B-47 = 104
Integer Answer

24B-48 = 46.1
= 4.61×10^{1}

24B-49 = 1080
= 1.08×10^{3}

24B-50 = 27.8
= 2.78×10^{1}

24B-51 = 2.39×10^{-6}

24B-52 = 0.00990
= 9.90×10^{-3}

24B-53 = 25.3
= 2.53×10^{1}

24B-54 = 0.0615
= 6.15×10^{-2}

24B-55 = -50.7
= -5.07×10^{1}

24B-56 = -28400
= -2.84×10^{4}

24B-57 = 0.188
= 1.88×10^{-1}

24B-58 = 0.680
= 6.80×10^{-1}

24B-59 = 2.06
= 2.06×10^{0}

24B-60 = 22.0
= 2.20×10^{1}

24B-61 = 6.78×10^{-53}

24B-62 = 1.69×10^{12}

24B-63 = 330
= 3.30×10^{2}

24B-64 = -3.92
= -3.92×10^{0}

24B-65 = 1.54×10^{-5}

24B-66 = 468
= 4.68×10^{2}

24B-67 = -0.0278
= -2.78×10^{-2}

24B-68 = 88.3
= 8.83×10^{1}

24B-69 = 0.00176
= 1.76×10^{-3}

24B-70 = 77.4
= 7.74×10^{1}

24B-71 = 10.4
= 1.04×10^{1}

24B-72 = 10.0
= 1.00×10^{1}

24B-73 = 2.04
= 2.04×10^{0}

24B-74 = 154
= 1.54×10^{2}

24B-75 = 0.478
= 4.78×10^{-1}

24B-76 = 960
= 9.60×10^{2}

24B-77 = 1.63
= 1.63×10^{0}

24B-78 = 3.90×10^{-9}

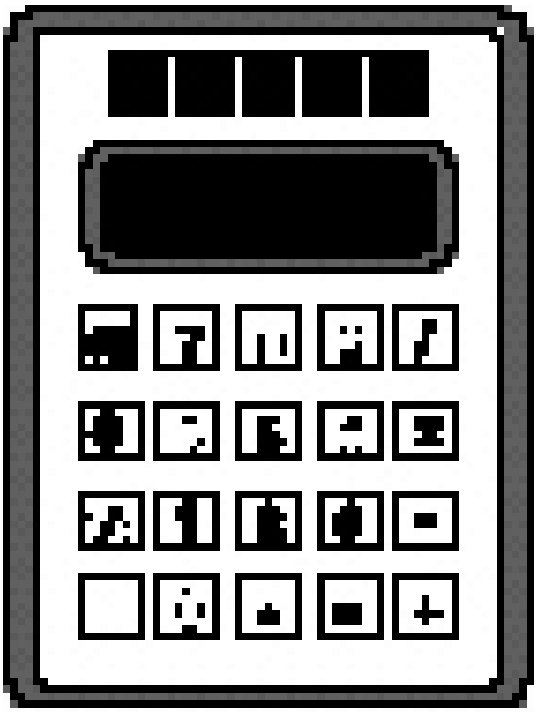
24B-79 = 34400
= 3.44×10^{4}

24B-80 = -0.115
= -1.15×10^{-1}

SPRING DISTRICT 2023-2024

A+ ACADEMICS

University Interscholastic League



Calculator Applications

DO NOT OPEN TEST
UNTIL TOLD TO DO SO

2023 – 2024 UIL MS Calculator Test C

24C–1. 2730 – 1670 ---------- 1=_____

24C–2. –70 + 35 – 10 ---------- 2=_____

24C–3. 1550 + 5810 – 5300 ---------- 3=_____

24C–4. π – 3 + 5 – 1 ---------- 4=_____

24C–5. 319 + 998 – 1550 – 1300 ---------- 5=_____

24C–6. 68.9 – 178 – 532 – 202 + 173 ---------- 6=_____

24C–7. –5.29 + 6.13 + 5.31 + 0.946 + 1.11 ---------- 7=_____

24C–8. –2.25 + 4.17 – 2.48 + 4.9 + 3.77 ---------- 8=_____

24C–9. 60 x 285 x 157 ---------- 9=_____

24C–10. 341 x 191 x 4470 x 1130 ---------- 10=_____

24C–11. What is the product of the negative square root of one thousand and twenty-eight point seven? ---------- 11=_____

24C–12. How many hours are in 8½ weeks? ---------- 12=_____ hrs (Integer)

24C–13. A menu for a local Mexican food restaurant where I frequently eat listed chicken fajitas at $18.50 each, guacamole at $1.75, flour tortillas at $1.25, pinto beans at $1.75, rice at $1.25 and tea at $2.25. If I ordered each of the items listed, how much did I pay for all of these items, excluding sales tax? ---------- 13=$_____

24C–14. (470)[287 x 495/295] ---------- 14=_____

24C–15. (–105)[260 x 926 x 922] ---------- 15=_____

24C–16. $\{-86/42\}\left[\frac{97}{69 + 40}\right]$ ---------- 16=_____

24C–17. (295 + 63)[51 – 46 – 144] ---------- 17=_____

24C–18. $\left[\frac{(0.01 + 0.0258)}{397/490}\right]\left[\frac{49.1}{135}\right]$ ---------- 18=_____

24C–19. $\left[\frac{111/130}{94/213}\right]\{7.33 + 4.93 - 3.62\}$ ---------- 19=_____

24C–20. (0.733)[481/456 x 201/285] – 0.248 ---------- 20=_____

24C–21. $\frac{(2.48)(0.00966)}{0.00422}(6.84 - 10.5)$ ---------- 21=_____

24C–22. $\frac{(\pi)(153/225)(304/369)}{(535/734)}$ ---------- 22=_____

24C–23. $\frac{(3.37 + 16.8 - \pi)}{\{(1.41 - 1.33)/(464)\}}$ ---------- 23=_____

24C–24. If the city of Austin was founded in 1839, how old is the city of Austin in 2023? ---------- 24=_____ yrs (Integer)

24C–25. Liz is jogging at an average speed of 4.25 miles per hour. In the distance she sees her oldest son, Wesley, standing underneath a large oak tree. If she gets to Wesley in 2½ minutes, how far away from Wesley was Liz when she first spotted him?---------- 25=_____ feet

24C–26. A social media app called Threads had 100 million users within five days of its initial release by the Facebook's parent company, Meta. What was the average rate of new users joining Threads? ------- 26=_____ users/min

24C–27. $\dfrac{(317 + 530)(0.335 + 0.292)}{(1.15\text{x}10^{12})}$ ---------- 27=_____

24C–28. $\dfrac{(1.84\text{x}10^{7}) + (2.22\text{x}10^{7})}{(-0.0158)(0.0262) - 2.17\text{x}10^{-4}}$ ---------- 28=_____

24C–29. $\dfrac{(1.56 - 5.11)(42.2 + 81.6)}{(1.06\text{x}10^{12})}$ ---------- 29=_____

24C–30. $\dfrac{1}{0.031} + \dfrac{1}{(\pi)(0.0456 - 0.0357)}$ ---------- 30=_____

24C–31. $(0.00201)\left[\dfrac{1.69}{(5.16\text{x}10^{11})}\right]$ ---------- 31=_____

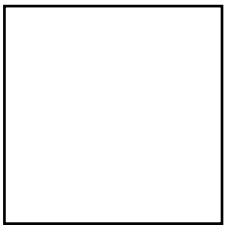
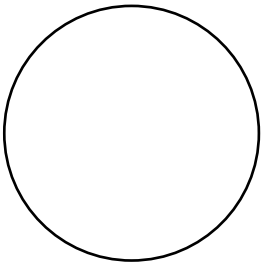
24C–32. $[0.00778]\left[\dfrac{1/68.8}{1/95.4}\right]$ ---------- 32=_____

24C–33. $1/(0.0101 - 0.0124) - 1/(-9.77\text{x}10^{-4})$ ---------- 33=_____

24C–34. $\left[\dfrac{1/2960}{1/1780}\right][4.16\text{x}10^{6}]$ ---------- 34=_____

24C–35. Within a gym class there are 23 students that weigh between 75 and 100 pounds, 18 students that weigh between 101 and 125 pounds, 17 students that weigh between 126 and 150 pounds and 6 students that weigh more than 151 pounds. What is the probability of randomly selecting a student that weighs 130 pounds? ---------- 35=_____

24C–36. If the distance from McAllen to Rio Grande City is 42.3 miles and it takes Juan 48 minutes to travel that distance, what is Juan's average speed? ---------- 36=_____mph

24C-37.	24C-38.
SQUARE	CIRCLE
	
Perimeter = 0.000419 Square Area = ?	Circumference = 72900 Circle Area = ?
24C-37=_____	24C-38=_____

24C–39. $\dfrac{(42700 + 71400)^2}{(0.877 - 0.763)^3}$ ---------- 39=_____

24C–40. $\left[\dfrac{10.4}{1180}\right](4.4 + 2.16)^2$ ---------- 40=_____

24C–41. $(0.182 + 0.599)^2(4.97 + 9.63)^2$ ---------- 41=_____

24C–42. $\sqrt{(3760/950) + 3.96 - 3.04}$ ---------- 42=_____

24C–43. $(1/(0.00142))(30600 - 29600)^3$ ---------- 43=_____

24C–44. $\sqrt{9.06} + \sqrt{12.6 + 18.4} - (\pi)\sqrt{13.9}$ ---------- 44=_____

24C–45. $\sqrt[4]{0.917 - 203/430} + 1/\sqrt{5.97 + 9.95}$ ---------- 45=_____

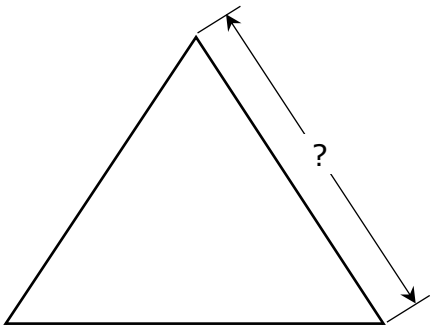
24C–46. $\dfrac{(5420 + 10600)^{1/2}}{(93.2 - 28.7)^{1/5}}$ ---------- 46=_____

24C–47. A typical gallon jar of *Whole Queen Olives* usually holds 175 olives. Based on this fact, an 8-oz jar should hold at most how many whole *Whole Queen Olives* (WQO)?---------- 47=____WQO (Integer)

24C–48. A 20-ft long rope is attached to the top of a 18-ft tall pole. If the rope stretched taut so that it touches the ground, at what acute angle to the ground does the rope make?---------- 48=_____°

24C-49.

EQUILATERAL TRIANGLE

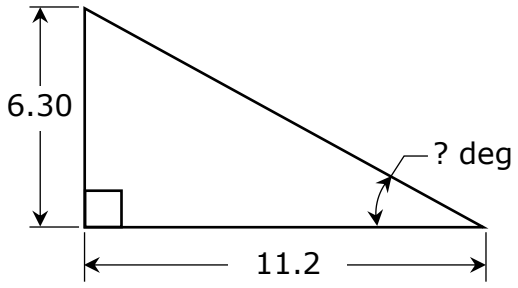


Area = 4.92

24C-49=_____

24C-50.

RIGHT TRIANGLE



24C-50=_____

24C–51. $\dfrac{(0.0148 + 0.047 - 0.0604)^3}{\sqrt{3750 + 17800 + 14400}}$ ---------- 51=_____

24C–52. $\dfrac{\sqrt{4.86 + \pi + 16.6}}{(0.974 - 5.87 + 5.38)^4}$ ---------- 52=_____

24C–53. $\left[\dfrac{\sqrt{\sqrt{0.0516 - 0.0203}}}{-(1550 - 1280)}\right]^3 [0.737 + 1.77]$ ---------- 53=_____

24C–54. $1820 + \sqrt{(5930)(6830)} - (1530 + 6240)$ ---------- 54=_____

24C–55. $0.292 + \sqrt{(754)/(303)} - (0.304 + 0.299)^2$ ---------- 55=_____

24C–56. $(9.12)^2 \sqrt{(373)/(47.9)} - (87.6 + 105)$ ---------- 56=_____

24C–57. $(\text{rad}) \sin(78.5) + (28.1/20.3)$ ---------- 57=_____

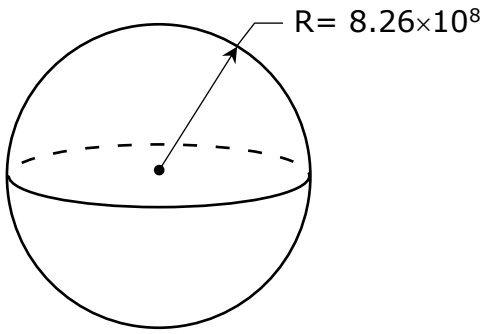
24C–58. $\sqrt{\dfrac{1/(13.8 - 13.5)}{(2510)(19.9 + 34.9)^6}}$ ---------- 58=_____

24C–59. The coefficient of friction, μ, can be defined as the ratio of the motion-opposing frictional force parallel to the object's surface in contact, to the normal, or perpendicular, force between an object's surface. If μ for rubber against concrete is 0.75 and a solid rubber block with a normal force (weight) of 3.75 pounds is rubbing against a concrete floor, what is the frictional force opposing the blocks motion? 59=_____ Lbs.

24C–60. A car traveling with an average speed of 67 miles per hour (mph) is just behind and starting to pass a car traveling with an average speed of 63 mph in the lane next to it. If the faster car has a length of 24-ft and the slower car has a length of 15.4-ft, how long does it take the faster car to pass the slower car so that its back end is 25-ft ahead of the front end of the slower car?---------- 60=_____ sec

24C-61.

SPHERE

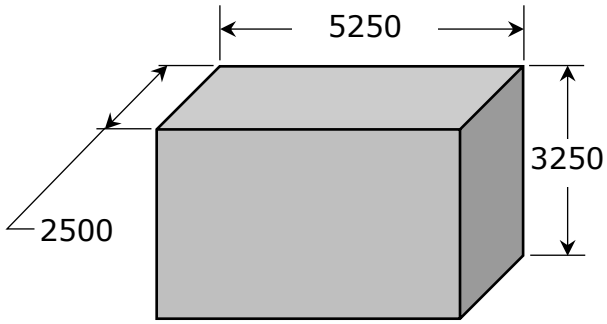


Volume = ?

24C-61=_____

24C-62.

RECTANGULAR SOLID BOX



Total Surface Area = ?

24C-62=_____

24C–63. $\frac{21!}{19!} + 5!$ ---------- 63=_____

24C–64. (deg) (2.29 – 9.1)sin(1.36°) ---------- 64=_____

24C–65. (deg) (4730 + 8850)sin(26.3°) ---------- 65=_____

24C–66. (deg) (6.85 – 1.44)tan(11.8°) + 0.424 ---------- 66=_____

24C–67. (deg) [44.7]cos(177° – 172°) ---------- 67=_____

24C–68. (deg) $\frac{\sin(3.31°) - \tan(3.31°)}{\sin(3.31°)}$ ---------- 68=_____

24C–69. (rad) sin[(14 – 29.9)(5.48)] ---------- 69=_____

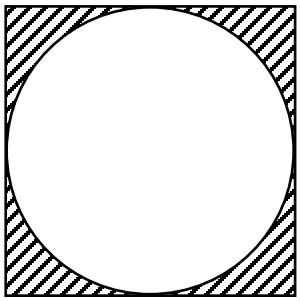
24C–70. $\left[(109)\left(\frac{25.2}{(11.3)(\pi)}\right)\right]^{7/2}$ ---------- 70=_____

24C–71. A rectangular box-shaped aquarium measures 30” by 15” by 18”. How many gallons of water will it hold?---------- 71=_____gal

24C–72. Mike predicted it would take 3¼ cubic yards of concrete to build a small concrete pad. If it actually took 2¾ cubic yards, what was Mike’s percent error in his prediction? ---------- 72=_____%

24C-73.

SQUARE AND CIRCLE



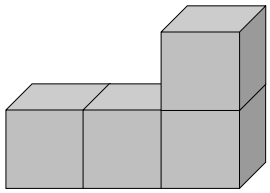
Circle Area = 100

Shaded Area = ?

24C-73=_____

24C-74.

IDENTICAL CUBES



Total Volume = 1000

Total Exposed Surface Area = ?

24C-74=_____

24C–75. $\dfrac{(1.14)^{0.24}(28.4)^{0.233}}{(7.61 - 7.07)^{-3}}$ ---------- 75=_____

24C–76. $\dfrac{\text{Log}(1.18\text{x}10^{7} + 3.94\text{x}10^{6})}{10.2}$ ---------- 76=_____

24C–77. $\text{Log}(10.3 + 15.6 + 5.47)$ ---------- 77=_____

24C–78. $\dfrac{(e^{0.837})(e^{0.27})(e^{0.644})}{\text{Ln}(94 + 240)}$ ---------- 78=_____

24C–79. $2 + 4 + 6 + \ldots + 798$ ---------- 79=_____

24C–80. $1 + (0.97) + \dfrac{(0.97)^2}{2} + \dfrac{(0.97)^3}{6} + \dfrac{(0.97)^4}{24}$ ---------- 80=_____

2023 – 2024 UIL MS Calculator Test C

24C-1 = 1060
= 1.06×10^{3}

24C-2 = -45.0
= -4.50×10^{1}

24C-3 = 2060
= 2.06×10^{3}

24C-4 = 4.14
= 4.14×10^{0}

24C-5 = -1530
= -1.53×10^{3}

24C-6 = -670
= -6.70×10^{2}

24C-7 = 8.21
= 8.21×10^{0}

24C-8 = 8.11
= 8.11×10^{0}

24C-9 = 2.68×10^{6}

24C-10 = 3.29×10^{11}

24C-11 = -90.8
= -9.08×10^{1}

24C-12 = 1428
Integer Answer

24C-13 = 26.75
Dollar Answer

24C-14 = 226000
= 2.26×10^{5}

24C-15 = -2.33×10^{10}

24C-16 = -1.82
= -1.82×10^{0}

24C-17 = -49800
= -4.98×10^{4}

24C-18 = 0.0161
= 1.61×10^{-2}

24C-19 = 16.7
= 1.67×10^{1}

24C-20 = 0.297
= 2.97×10^{-1}

24C-21 = -20.8
= -2.08×10^{1}

24C-22 = 2.41
= 2.41×10^{0}

24C-23 = 98800
= 9.88×10^{4}

24C-24 = 184
Integer Answer

24C-25 =935
= 9.35×10^{2}

24C-26 = 13900
= 1.39×10^{4}

24C-27 = 4.62×10^{-10}

24C-28 = -6.43×10^{10}

24C-29 = -4.15×10^{-10}

24C-30 = 64.4
= 6.44×10^{1}

24C-31 = 6.58×10^{-15}

24C-32 = 0.0108
= 1.08×10^{-2}

24C-33 = 589
= 5.89×10^{2}

24C-34 = 2.50×10^{6}

24C-35 = 0.266
= 2.66×10^{-1}

24C-36 = 52.9
= 5.29×10^{1}

24C-37 = 1.10×10^{-8}

24C-38 = 4.23×10^{8}

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24C-39 = 8.79×10^{12}

24C-40 = 0.379
= 3.79×10^{-1}

24C-41 = 130
= 1.30×10^{2}

24C-42 = 2.21
= 2.21×10^{0}

24C-43 = 7.04×10^{11}

24C-44 = -3.13
= -3.13×10^{0}

24C-45 = 1.07
= 1.07×10^{0}

24C-46 = 55.0
= 5.50×10^{1}

24C-47 = 10
Integer Answer

24C-48 = 64.2
= 6.42×10^{1}

24C-49 = 3.37
= 3.37×10^{0}

24C-50 = 29.4
= 2.94×10^{1}

24C-51 = 1.45×10^{-11}

24C-52 = 90.4
= 9.04×10^{1}

24C-53 = -9.48×10^{-9}

24C-54 = 414
= 4.14×10^{2}

24C-55 = 1.51
= 1.51×10^{0}

24C-56 = 39.5
= 3.95×10^{1}

24C-57 = 1.42
= 1.42×10^{0}

24C-58 = 2.21×10^{-7}

24C-59 = 2.81
= 2.81×10^{0}

24C-60 = 11.0
= 1.10×10^{1}

24C-61 = 2.36×10^{27}

24C-62 = 7.66×10^{7}

24C-63 = 540
= 5.40×10^{2}

24C-64 = -0.162
= -1.62×10^{-1}

24C-65 = 6020
= 6.02×10^{3}

24C-66 = 1.55
= 1.55×10^{0}

24C-67 = 44.5
= 4.45×10^{1}

24C-68 = -0.00167
= -1.67×10^{-3}

24C-69 = 0.740
= 7.40×10^{-1}

24C-70 = 4.07×10^{6}

24C-71 = 35.1
= 3.51×10^{1}

24C-72 = 18.2
= 1.82×10^{1}

24C-73 = 27.3
= 2.73×10^{1}

24C-74 = 714
= 7.14×10^{2}

24C-75 = 0.354
= 3.54×10^{-1}

24C-76 = 0.706
= 7.06×10^{-1}

24C-77 = 1.50
= 1.50×10^{0}

24C-78 = 0.991
= 9.91×10^{-1}

24C-79 = 160000
= 1.60×10^{5}

24C-80 = 2.63
= 2.63×10^{0}