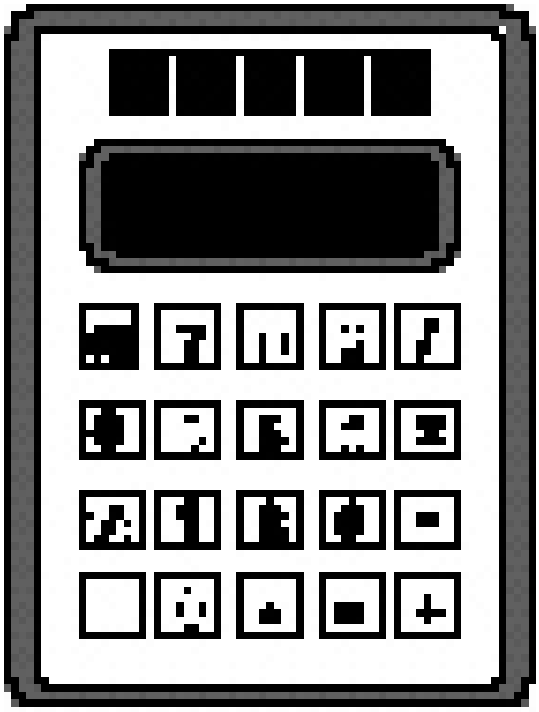
INVITATIONAL 2024-2025

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.*, 1.23x10*, $1.23x10^{0}$*
$1.23x10^{1}$, $1.23x10^{01}$, .0190, 0.0190, $1.90x10^{-2}$

Incorrect: 12.30, 123.0, $1.23(10)^{2}$, $1.23 \cdot 10^{2}$, $1.230x10^{2}$,
$1.23*10^{2}$, 0.19, $1.9x10^{-2}$, $19.0x10^{-3}$, 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.

2024 – 2025 UIL MS Calculator Test A

25X–1. 37.6 + 8.69 ---------- 1=_____

25X–2. –33 – 52 – 26 ---------- 2=_____

25X–3. –178 – 432 – 463 ---------- 3=_____

25X–4. 42 + 34 – 16 – π ---------- 4=_____

25X–5. 469 – 680 – 1100 – 686 ---------- 5=_____

25X–6. 150 + 539 – 312 – 75.9 + 443 ---------- 6=_____

25X–7. 0.276 + π + 0.681 + 1.61 + 0.503 ---------- 7=_____

25X–8. 1.94 + 1.65 – 2.66 + 0.681 + 0.763 ---------- 8=_____

25X–9. 140 x 136 x 51.5 ---------- 9=_____

25X–10. 7960 x 823 x 201 x 300 ---------- 10=_____

25X–11. What is the sum of 25.3, pi and 7.08?---------- 11=_____

25X–12. The positive square root of forty-five thousand subtracted from three hundred seventeen yields what number? ---------- 12=_____

25X–13. If Tom sells 128 cookies at 75¢ per cookie, how much money did Tom earn selling cookies?---------- 13=$_____

25X–14. $238/[55 \times 204 \times 71]$ ---------- 14=_____

25X–15. $(89)[184 \times 390 \times 438]$ ---------- 15=_____

25X–16. $\{(141)(81 - 35)(180)\} - 9.08\text{x}10^{5}$ ---------- 16=_____

25X–17. $(214 + 141)[204 - 331 - 206]$ ---------- 17=_____

25X–18. $\left[\frac{25/90}{52/12}\right]\{312 + 438 - 301\}$ ---------- 18=_____

25X–19. $\frac{[0.095/(0.0298)]/3.99}{(0.00158 \times 0.00117)(0.00171)}$ ---------- 19=_____

25X–20. $\frac{(2.75\text{x}10^{-4})(1.57\text{x}10^{-4})}{3140}(\pi - 0.51)$ ---------- 20=_____

25X–21. $\frac{0.0111 + 0.0479 + 0.0328}{(9.77\text{x}10^{-5})(1100)(6.02\text{x}10^{6})}$ ---------- 21=_____

25X–22. $\frac{(313 \times 371)/1490}{(300 \times 0.0434) + 3.54}$ ---------- 22=_____

25X–23. $\left[\frac{666 + 1130}{696 - 611}\right]\left[\frac{1270}{256}\right]$ ---------- 23=_____

25X–24. According to the U.S. Department of Transportation, the port of Laredo, Texas, handled 2,936,130 incoming trucks in 2023. On average, how many incoming trucks entered the United States via the port of Laredo daily?---------- 24=_____ trucks

t5X–25. First class forever postage stamps cost 73¢ each. What is the greatest number of these stamps one can buy for $20? ---------- 25=____ stamps(integer)

25X–26. The cheapest ticket for the July 9th Taylor Swift "Eras Tour" concert in Zurich, Switzerland was listed at $645 on Vivid Seats. If the concert lasted 3 hours and 22 minutes, how much did one minute of the concert cost?---------- 26=$_____

25X–27. $[2630 - (4220 + 3430)] + [(0.822)(1820 - 5110)]$ ------ 27=_____

25X–28. $\dfrac{(3.97\text{x}10^{10}) + (6.40\text{x}10^{10})}{(-0.107)(0.0731) - 0.00594}$ ---------- 28=_____

25X–29. $\dfrac{(0.134 - 0.0928)(17.1 + 8.27)}{(1.10\text{x}10^{11})}$ ---------- 29=_____

25X–30. $\dfrac{(0.00718 + 0.00245)}{(4.22\text{x}10^{12})}$ ---------- 30=_____

25X–31. $\dfrac{1}{-5310} + \dfrac{1}{(\pi)(351 - 2090)}$ ---------- 31=_____

25X–32. $[0.216]\left[\dfrac{1/9.41\text{x}10^{-4}}{1/0.00169}\right]$ ---------- 32=_____

25X–33. $\dfrac{1}{731} - \dfrac{1}{(797 + 303)}$ ---------- 33=_____

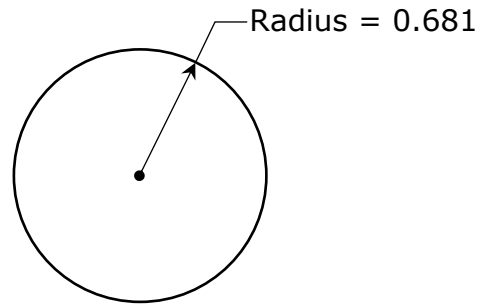
25X–34. $\left[\dfrac{1/172}{1/48}\right] + [0.782]$ ---------- 34=_____

25X–35. On one of the TxDot highway marquees, I noticed that it stated that the next town was 13 miles and 12 minutes. What average speed, in miles per hour (mph), would I need to be driving to accomplish that feat? ---------- 35=_____ mph

25X–36. One day, I noticed that a yardstick cast a shadow that was 8" long. If a nearby pole cast a shadow that measured 3' 6" long, how tall is the pole? ---------- 36=_____ feet

25X-37.

CIRCLE

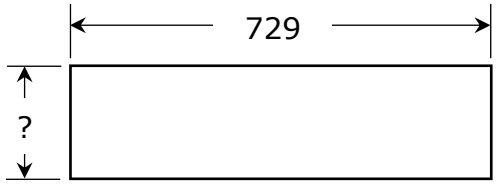


Circumference = ?

25X-37=_____

25X-38.

RECTANGLE



Area = 183000

25X-38=_____

25X–39. $\left[\dfrac{494 + (1/(0.00126))}{(644/650) - 0.281}\right]^2$ ---------- 39=_____

25X–40. $(21 + 34 + 29.5)^2(59.9 + 43)^2$ ---------- 40=_____

25X–41. $\sqrt{\dfrac{6.48 + 26.4}{19.7 - 16.4}}$ ---------- 41=_____

25X–42. $\sqrt{(17.7/42) + 0.146 - 0.0499}$ ---------- 42=_____

25X–43. $(1/(0.0235))(5.17\text{x}10^5 - 1.97\text{x}10^5)^2$ ---------- 43=_____

25X–44. $(17100)\sqrt{38500 + 20700 + 39200}$ ---------- 44=_____

25X–45. $\sqrt{10.6 - 722/167} + 1/\sqrt{0.0174 + 0.0237}$ ---------- 45=_____

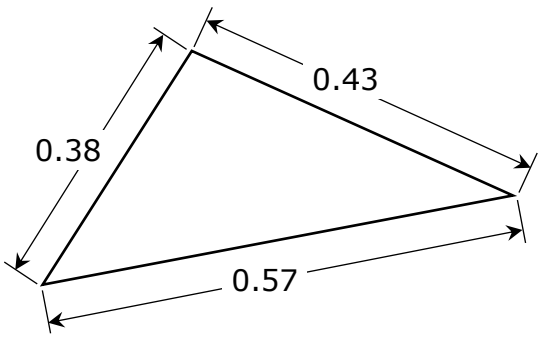
25X–46. $(468)\sqrt{3480 + 4790 - 4300}$ ---------- 46=_____

25X–47. Matt walked 45 yards directly north, stopped and turned due west to walk 60 yards. What is the shortest distance back to his starting point? ---------- 47=_____ft

25X–48. A rope was attached to the top of a 25’ flagpole and stretched taut so that the other end of the rope just reached the ground 18’ from the base of the flagpole. What angle did the taut rope make with the level ground?---------- 48=_____deg

25X-49.

TRIANGLE

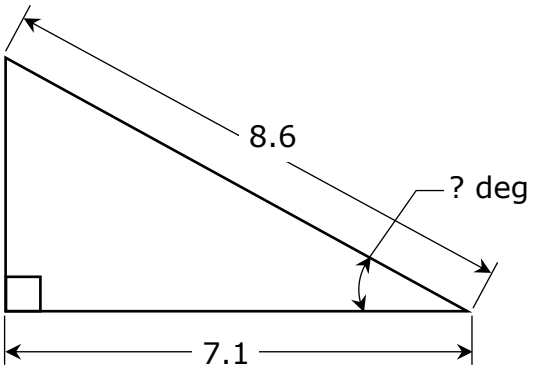


Semi-perimeter = ?

25X-49=_____

25X-50.

RIGHT TRIANGLE



25X-50= _____deg

25X–51. $\left[\frac{\sqrt{\sqrt{0.0134 - 0.0112}}}{-(0.0216 - 0.0107)}\right]^2 [2820 + 2470]$ ---------- 51=_____

25X–52. $\frac{(10800 + 1650 - 13600)^3}{\sqrt{0.139 + 0.112 + 0.173}}$ ---------- 52=_____

25X–53. $\left[\frac{14.2 + 12 + \sqrt{206 + 213}}{25.7/53.9}\right]^3$ ---------- 53=_____

25X–54. $(18.6)(6.96 \times 10^9)^{1/3} - [(6.77 \times 10^8)(2.29 \times 10^9)]^{1/4}$ ------ 54=_____

25X–55. $19200 + \sqrt{(5110)(21200)} - (7160 + 12400)$ ---------- 55=_____

25X–56. $\sqrt{\frac{1/(8.84 - 5.22)}{(30.1)(46.1 + 54.8)^5}}$ ---------- 56=_____

25X–57. $\sqrt{\frac{1/(52.7 - 21.4)}{(2160)(932 + 1330)^{-2}}}$ ---------- 57=_____

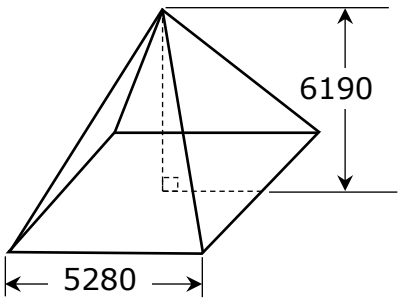
25X–58. $\sqrt{\frac{(30.7)(594)}{(681) + (1450)}} - 4.07$ ---------- 58=_____

25X–59. Researchers at the University of California San Diego School of Medicine recently created a formula to convert a dog's age, in years, to a human age, in years. The formula involves multiplying the natural logarithm of the dog's age by 16 and adding 31. Using this formula, what is the human age equivalent for Lady, our 14-year-old Labrador dog?---------- 59=_____ years

25X–60. What is the percent error in using 3 for the number pi? ---- 60=_____ %

25X-61.

SQUARE PYRAMID

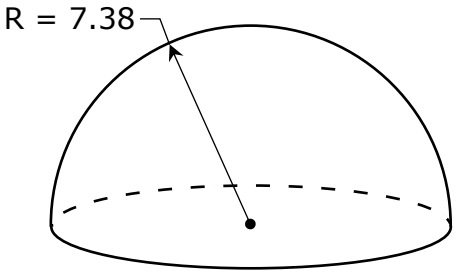


Volume = ?

25X-61=_____

25X-62.

HEMISPHERE



Volume = ?

25X-62=_____

25X–63. $\frac{28!/22!}{20! + 22!}$ ---------- 63=_____

25X–64. (deg) (1110 + 783)cos(51.9°) ---------- 64=_____

25X–65. $(40400 - 76400)^{-10}(1.70 \times 10^{6})$ ---------- 65=_____

25X–66. (deg) tan(0.255° – 0.351°) + 0.00151 ---------- 66=_____

25X–67. (rad) $\cos\left[\frac{(1.46)(\pi)}{(1.5)(119)}\right]$ ---------- 67=_____

25X–68. (rad) (1650)sin(28) ---------- 68=_____

25X–69. (deg) $\frac{\tan(19.5°)}{5850 + 2370}$ ---------- 69=_____

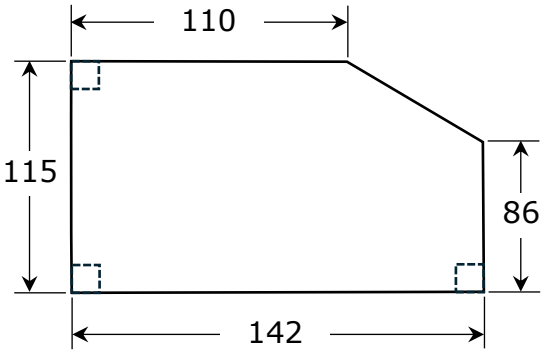
25X–70. $(50.2 + 71.6 + 367)^{2/5}$ ---------- 70=_____

25X–71. A 15 Lb. bag of cat food has bits of food that measure 10 bits of food per gram. If there are about 453.592 grams per pound, how many bits of cat food are in the bag?---------- 71=_____ bits

25X–72. On June 30, 1994, the hottest recorded temperature in Texas was recorded in Monahans. If this temperature was listed as 48.9 °C, what is this temperature in degrees Fahrenheit (°F)?---------- 72=_____ °F

25X-73.

PENTAGON

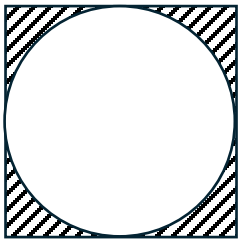


Perimeter = ?

25X-73=_____

25X-74.

SQUARE AND CIRCLE



Perimeter of square = 1000

Hatched area = ?

25X-74=_____

25X–75. $\dfrac{\text{Log}(1990 + 1990)}{47200 - 28900}$ ---------- 75=_____

25X–76. $\text{Ln}\left[\dfrac{92 + 116 + 32.9}{55.2 + 132 - 70}\right]$ ---------- 76=_____

25X–77. $(22400)10^{(0.379)(6.45)}$ ---------- 77=_____

25X–78. $\text{Ln}\left[\dfrac{8.3 + 21.2 + 6.33}{629 - 82.8 - 228}\right]$ ---------- 78=_____

25X–79. $1 + 3 + 5 + \ldots + 697$ ---------- 79=_____

25X–80. $(0.409) - \dfrac{(0.409)^2}{2} + \dfrac{(0.409)^3}{3} - \dfrac{(0.409)^4}{4}$ ---------- 80=_____

2024 – 2025 UIL MS Calculator Test A Answer Key

25X-1 = 46.3
= 4.63×10^{1}

25X-2 = -111
= -1.11×10^{2}

25X-3 = -1070
= -1.07×10^{3}

25X-4 = 56.9
= 5.69×10^{1}

25X-5 = -2000
= -2.00×10^{3}

25X-6 = 744
= 7.44×10^{2}

25X-7 = 6.21
= 6.21×10^{0}

25X-8 = 2.37
= 2.37×10^{0}

25X-9 = 981000
= 9.81×10^{5}

25X-10 = 3.95×10^{11}

25X-11 = 35.5
= 3.55×10^{1}

25X-12 = 105
= 1.05×10^{2}

25X-13 = 96.00
Dollar Answer

25X-14 = 0.000299
= 2.99×10^{-4}

25X-15 = 2.80×10^{9}

25X-16 = 259000
= 2.59×10^{5}

25X-17 = -118000
= -1.18×10^{5}

25X-18 = 28.8
= 2.88×10^{1}

25X-19 = 2.53×10^{8}

25X-20 = 3.62×10^{-11}

25X-21 = 1.42×10^{-7}

25X-22 = 4.71
= 4.71×10^{0}

25X-23 = 105
= 1.05×10^{2}

25X-24 = 8040
= 8.04×10^{3}

25X-25 = 27
Integer Answer

25X-26 = 3.19
Dollar Answer

25X-27 = -7720
= -7.72×10^{3}

25X-28 = -7.54×10^{12}

25X-29 = 9.50×10^{-12}

25X-30 = 2.28×10^{-15}

25X-31 = -0.000371
= -3.71×10^{-4}

25X-32 = 0.388
= 3.88×10^{-1}

25X-33 = 0.000459
= 4.59×10^{-4}

25X-34 = 1.06
= 1.06×10^{0}

25X-35 = 65.0
= 6.50×10^{1}

25X-36 = 15.8
= 1.58×10^{1}

25X-37 = 4.28
= 4.28×10^{0}

25X-38 = 251
= 2.51×10^{2}

2024 – 2025 UIL MS Calculator Test A Answer Key

25X-39 = 3.29×10^{6}

25X-40 = 7.56×10^{7}

25X-41 = 3.16
= 3.16×10^{0}

25X-42 = 0.719
= 7.19×10^{-1}

25X-43 = 4.36×10^{12}

25X-44 = 5.36×10^{6}

25X-45 = 7.44
= 7.44×10^{0}

25X-46 = 29500
= 2.95×10^{4}

25X-47 = 225
= 2.25×10^{2}

25X-48 = 54.2
= 5.42×10^{1}

25X-49 = 0.690
= 6.90×10^{-1}

25X-50 = 34.4
= 3.44×10^{1}

25X-51 = 2.09×10^{6}

25X-52 = -2.34×10^{9}

25X-53 = 938000
= 9.38×10^{5}

25X-54 = 226
= 2.26×10^{2}

25X-55 = 10000
= 1.00×10^{4}

25X-56 = 9.37×10^{-7}

25X-57 = 8.70
= 8.70×10^{0}

25X-58 = -1.14
= -1.14×10^{0}

25X-59 = 73.2
= 7.32×10^{1}

25X-60 = -4.51
= -4.51×10^{0}

25X-61 = 5.75×10^{10}

25X-62 = 842
= 8.42×10^{2}

25X-63 = 2.41×10^{-13}

25X-64 = 1170
= 1.17×10^{3}

25X-65 = 4.65×10^{-40}

25X-66 = -0.000166
= -1.66×10^{-4}

25X-67 = 1.00
= 1.00×10^{0}

25X-68 = 447
= 4.47×10^{2}

25X-69 = 4.31×10^{-5}

25X-70 = 11.9
= 1.19×10^{1}

25X-71 = 68000
= 6.80×10^{4}

25X-72 = 120
= 1.20×10^{2}

25X-73 = 496
= 4.96×10^{2}

25X-74 = 13400
= 1.34×10^{4}

25X-75 = 0.000197
= 1.97×10^{-4}

25X-76 = 0.721
= 7.21×10^{-1}

25X-77 = 6.23×10^{6}

25X-78 = -2.18
= -2.18×10^{0}

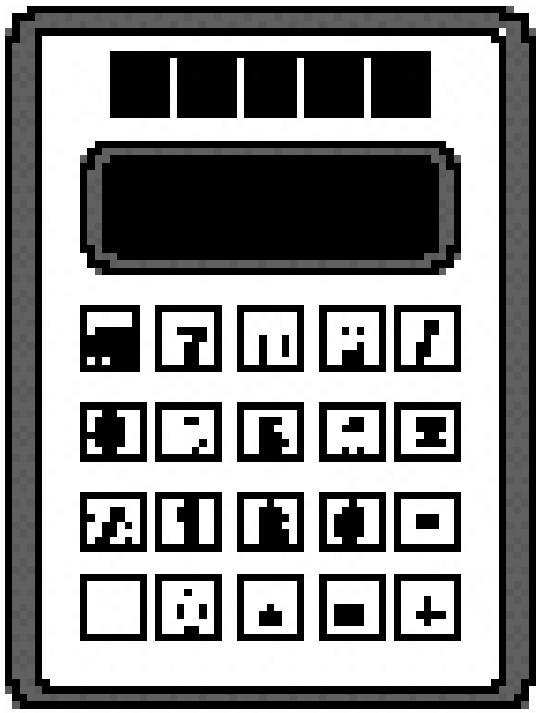
25X-79 = 122000
= 1.22×10^{5}

25X-80 = 0.341
= 3.41×10^{-1}

FALL/WINTER DISTRICT 2024-2025

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.*, 1.23x10*, $1.23x10^{0}$*
$1.23x10^{1}$, $1.23x10^{01}$, .0190, 0.0190, $1.90x10^{-2}$

Incorrect: 12.30, 123.0, $1.23(10)^{2}$, $1.23 \cdot 10^{2}$, $1.230x10^{2}$,
$1.23*10^{2}$, 0.19, $1.9x10^{-2}$, $19.0x10^{-3}$, 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.

2024 – 2025 UIL MS Calculator Test B

25Y–1. 26.9 + 29.1 ---------- 1=_____

25Y–2. 56 – 8 + 53 ---------- 2=_____

25Y–3. 60 + 139 + 90 ---------- 3=_____

25Y–4. 50 + 10 – 51 – 50 ---------- 4=_____

25Y–5. –2070 – 2020 – 5280 + 4040 ---------- 5=_____

25Y–6. 562 + 303 – 326 – 69.3 – 253 ---------- 6=_____

25Y–7. (4.36 – 2.96) + (3.59 – 2.37 – 0.824) ---------- 7=_____

25Y–8. –6.9 – 1.71 + π – 1.67 – 1.34 ---------- 8=_____

25Y–9. 399 x 201 x 133 ---------- 9=_____

25Y–10. 155 x 133 x 338 x 162 ---------- 10=_____

25Y–11. What is sum of ninety-one point seven, fourteen and two-thirds and three pi? ---------- 11=_____

25Y–12. If the University Interscholastic League (UIL) was founded on May 3, 1913, how old is the UIL in November 2024? ---------- 12=_____yrs(integer)

25Y–13. To replace the blade on my lawn mower, I was told it would cost me $72.88. If the labor cost for blade replacement is $45.50, how much did the new blade cost? ---------- 13=$_____

25Y–14. 732/[790 x 844 x 661] ---------- 14=_____

25Y–15. (781/753)[275 – 513] ---------- 15=_____

25Y–16. $\left[\frac{-437}{697}\right]$[(127/92) – 1.19] ---------- 16=_____

25Y–17. (16 + 90)[94 – 36 – 35] ---------- 17=_____

25Y–18. $\left[\frac{(5960/1380) - (5620/3030)}{136/28.9}\right]$ ---------- 18=_____

25Y–19. $\left[\frac{57/69}{45/15}\right]$ {1.21 + 0.994 – 1.97} ---------- 19=_____

25Y–20. (12.8)[32/42 x 122/191] – 3.55 ---------- 20=_____

25Y–21. $\frac{(\pi)(7/2)(10/10)}{88}$ ---------- 21=_____

25Y–22. $\frac{(1130 + 3100 - 2440)}{\{(5.59 - \pi)/(40.8)\}}$ ---------- 22=_____

25Y–23. $\frac{(\pi)(105/54)(29/152)}{(52/123)}$ ---------- 23=_____

25Y–24. Mike charges $85/hr for his work as an electrician. If a customer needs $339.99 worth of equipment installed and it takes Mike 4.25 hours to complete the installation, how much does Mike charge the customer? Note that an 8½% sales tax on the equipment only is included in the total charge. ---------- 24=$_____

25Y–25. Maria and her two girlfriends decided to go to an outdoor concert in July. The concert tickets were $15.75 each, the nachos for each girl cost $7.50 each, and the soft drinks cost each girl cost $4.75 each. If the girls took public transportation to the concert, and it cost $3.50 each roundtrip, what was the total cost for all the girls to go to the concert? 25=$_____

25Y–26. Li drove 8.6 miles to his favorite gas station and filled up his car's gas tank. He then drove 63.9 miles to see his brother. He then drove 109 miles to visit his sister. Li then drove back home on the exact same route. The next day, he drove back to the same gas station where he filled up his car earlier and put in 12.135 gallons of fuel. What is his car's miles per gallon (mpg) usage? ---------- 26=_____ mpg

25Y–27. $\dfrac{(136 - 116)(0.0395 + 0.0235)}{(2.95\text{x}10^{11})}$ ---------- 27=_____

25Y–28. $[3310 - (3050 + 4370)] + [(0.33)(900 - 3420)]$ -------- 28=_____

25Y–29. $(2.25)[(0.0469/0.0142)(77.5 + 107)]$ ---------- 29=_____

25Y–30. $\dfrac{(18.8 + 31.7)}{(1.71\text{x}10^{11})}$ ---------- 30=_____

25Y–31. $(22.9)\left[\dfrac{0.0688}{(9.97\text{x}10^{10})}\right]$ ---------- 31=_____

25Y–32. $[917]\left[\dfrac{1/0.0335}{1/0.0129}\right]$ ---------- 32=_____

25Y–33. $\left[\dfrac{1/131}{1/108}\right][1.84\text{x}10^{6}]$ ---------- 33=_____

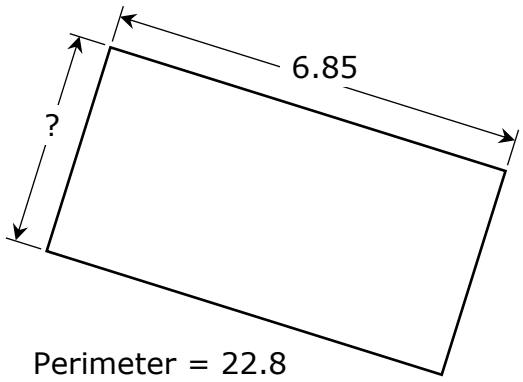
25Y–34. $\dfrac{1}{4870} - \dfrac{1}{4370} + \dfrac{1}{4940}$ ---------- 34=_____

25Y–35. A measuring cup placed underneath a leaky faucet collected 2.25 ounces of water in 1¾ hours. At this rate, how long will it take the leaky faucet to leak 5 gallons of water? ---------- 35=_____ hrs

25Y–36. On one of the TxDot highway marquees, I noticed that it stated that the next town was 15 miles and 17 minutes. What average speed, in miles per hour (mph), would I need to be driving to accomplish that feat? ---------- 36=_____ mph

25Y-37.

RECTANGLE

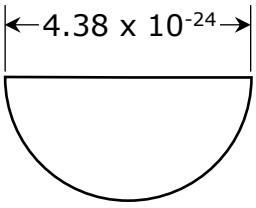


Perimeter = 22.8

25Y-37=_____

25Y-38.

SEMICIRCLE



Area = ?

25Y-38=_____

25Y–39. $(1.29 + 1.11)^2(223 + 133)^2$ ---------- 39=_____

25Y–40. $(0.395 + 0.814 + 0.748)^2(0.0921 + 0.132)^2$ ---------- 40=_____

25Y–41. $\left[\frac{30900 + (1/(5.58\text{x}10^{-5}))}{(15500/17700) - 0.109}\right]^2$ ---------- 41=_____

25Y–42. $(1/(0.0316))(1260 - 769)^2$ ---------- 42=_____

25Y–43. $\sqrt{(100/127) + 0.677 - 0.0952}$ ---------- 43=_____

25Y–44. $(123)\sqrt{324 + 566 + 606}$ ---------- 44=_____

25Y–45. $(3050)\sqrt{128 + 89 - 45.7}$ ---------- 45=_____

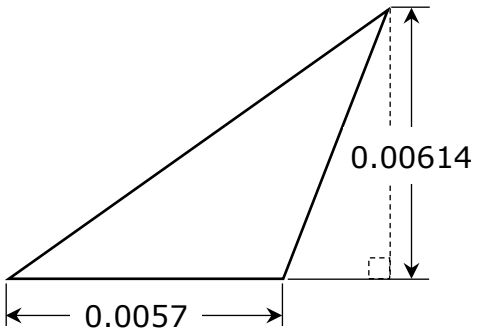
25Y–46. $\left[\sqrt[4]{(0.915/1.12)(17.1)}\right]^3$ ---------- 46=_____

25Y–47. A twenty-foot-long pole, on level ground, leaned against a building. If the top of the pole reached sixteen feet above the ground, what angle did the ladder make with the building? ---------- 47=_____deg

25Y–48. The minute-hand of an analog clock is 5.75" long while the hour-hand is 3.28" long. At exactly 3 o'clock, what is the shortest distance between the end-tips of the clock hands? ---------- 48=_____"

25Y-49.

TRIANGLE

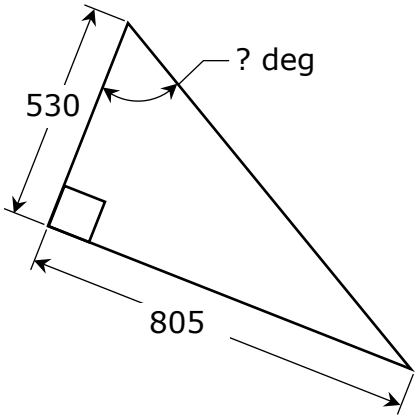


Area = ?

25Y-49=_____

25Y-50.

RIGHT TRIANGLE



25Y-50= _____deg

25Y–51. $\left[\dfrac{483 - 142 + \sqrt{4.51 \times 10^5 / 4.56}}{-844 + 1450}\right]^2$ ---------- 51=_____

25Y–52. $\dfrac{\sqrt{16.5 + \pi + 13.2}}{(302 - 719 + 321)^4}$ ---------- 52=_____

25Y–53. $\sqrt{\dfrac{0.0353}{(8.22)(48.5)}} + \dfrac{(1.57 - 1.39)}{(11.7 + 6.28)}$ ---------- 53=_____

25Y–54. $(8.8)^2 \sqrt{(45.1)/(1.93)} - (295 + 176)$ ---------- 54=_____

25Y–55. $\sqrt{\dfrac{1/(12.6 - 10)}{(31.6)(38.9 + 4.43)^3}}$ ---------- 55=_____

25Y–56. $\sqrt{\dfrac{(1.89 \times 10^5)(6230)}{(7160)(16300)}} - 1.91 + 1.49$ ---------- 56=_____

25Y–57. $\sqrt{\dfrac{(71.9)(3450)}{(20.3) + (29.6)}} - 121$ ---------- 57=_____

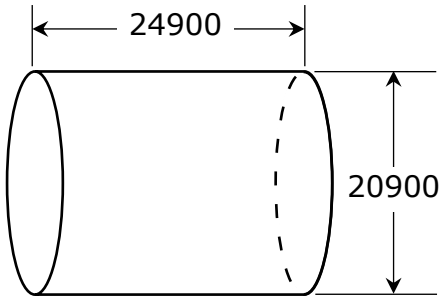
25Y–58. (rad) tan(5.19) + (3.28/12.7) ---------- 58=_____

25Y–59. Between 2021 and 2022 the city of Frisco, Texas grew from 193,140 to 202,075. What percent increase did this represent? -------- 59=_____%

25Y–60. According to an article from the Animal Health Foundation, a formula to convert a cat's age, in years, to a human age, in years, involves using 15 human-years to represent the cat's first year of life, then adding 10 human-years to represent the second year of the cat's life and then adding 4 human-years for every year of the cat's life after that. According to this formula, what is the human age equivalent for Daisy, our 18-year-old cat? ---------- 60=_____years

25Y-61.

RIGHT CIRCULAR CYLINDER

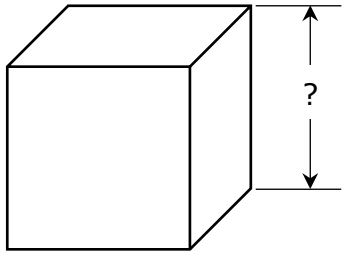


Volume = ?

25Y-61=_____

25Y-62.

SOLID CUBE



Total Surface Area = 0.0000825

25Y-62=_____

25Y–63. $\frac{17! - 19!}{16!}$ ---------- 63=_____

25Y–64. (deg) (18.3 – 35.1)tan(18°) ---------- 64=_____

25Y–65. (deg) $\frac{\tan(42°)}{548}$ ---------- 65=_____

25Y–66. (rad) $\cos\left[\frac{(17.1)(\pi)}{(125)(2.82)}\right]$ ---------- 66=_____

25Y–67. (deg) sin(240° – 229°) + 0.07 ---------- 67=_____

25Y–68. (deg) $\frac{\cos(230°)}{0.944 + 0.218}$ ---------- 68=_____

25Y–69. (rad) cos[(30.5 – 43.4)(5.92)] ---------- 69=_____

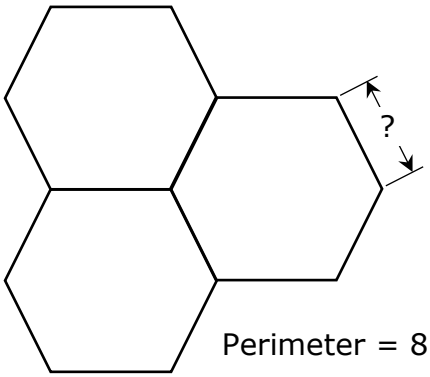
25Y–70. $(232 - 69.7)^{0.0338 - 0.0205}$ ---------- 70=_____

25Y–71. On February 12, 1899, the coldest recorded temperature in Texas was recorded in Tulia. If this temperature was listed as -30.6 °C, what is this temperature in degrees Fahrenheit (°F)?---------- 71=_____°F

25Y–72. A 15 Lb. bag of cat food that costs $52.99 has bits of cat food that measure 10 bits of food per gram. If there are about 453.592 grams per pound, how much did each bit of cat food cost? ---------- 72=_____¢

25Y-73.

IDENTICAL REGULAR HEXAGONS

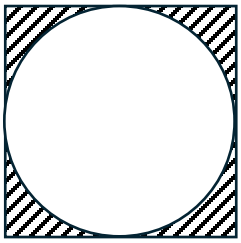


Perimeter = 8.26

25Y-73=_____

25Y-74.

SQUARE AND CIRCLE



Area of Circle = 1000

Hatched area = ?

25Y-74=_____

25Y–75. $\frac{\text{Log}(1.56\text{x}10^6 + 4.88\text{x}10^6)}{0.762}$ ---------- 75=_____

25Y–76. $\frac{\text{Log}(27.4 + 46)}{1050 - 314}$ ---------- 76=_____

25Y–77. $\frac{4650 - 7400}{\text{Log}(77.6 + 477)}$ ---------- 77=_____

25Y–78. $\frac{\text{Log}[376 + (\pi)(600)]}{0.342 + \text{Log}[0.761 + 1.88]}$ ---------- 78=_____

25Y–79. $1 + 2 + 3 + \ldots + 421$ ---------- 79=_____

25Y–80. $-\frac{1}{(8.69)} + \frac{1}{3(8.69)^3} - \frac{1}{5(8.69)^5} + \frac{1}{7(8.69)^7}$ ---------- 80=_____

2024 – 2025 UIL MS Calculator Test B Answer Key

25Y-1 = 56.0
= 5.60×10^{1}

25Y-2 = 101
= 1.01×10^{2}

25Y-3 = 289
= 2.89×10^{2}

25Y-4 = -41.0
= -4.10×10^{1}

25Y-5 = -5330
= -5.33×10^{3}

25Y-6 = 217
= 2.17×10^{2}

25Y-7 = 1.80
= 1.80×10^{0}

25Y-8 = -8.48
= -8.48×10^{0}

25Y-9 = 1.07×10^{7}

25Y-10 = 1.13×10^{9}

25Y-11 = 116
= 1.16×10^{2}

25Y-12 = 111
Integer Answer

25Y-13 = 27.38
Dollar Answer

25Y-14 = 1.66×10^{-6}

25Y-15 = -247
= -2.47×10^{2}

25Y-16 = -0.119
= -1.19×10^{-1}

25Y-17 = 2440
= 2.44×10^{3}

25Y-18 = 0.524
= 5.24×10^{-1}

25Y-19 = 0.0644
= 6.44×10^{-2}

25Y-20 = 2.68
= 2.68×10^{0}

25Y-21 = 0.125
= 1.25×10^{-1}

25Y-22 = 29800
= 2.98×10^{4}

25Y-23 = 2.76
= 2.76×10^{0}

25Y-24 = 730.14
Dollar Answer

25Y-25 = 94.50
Dollar Answer

25Y-26 = 29.2
= 2.92×10^{1}

25Y-27 = 4.27×10^{-12}

25Y-28 = -4940
= -4.94×10^{3}

25Y-29 = 1370
= 1.37×10^{3}

25Y-30 = 2.95×10^{-10}

25Y-31 = 1.58×10^{-11}

25Y-32 = 353
= 3.53×10^{2}

25Y-33 = 1.52×10^{6}

25Y-34 = 0.000179
= 1.79×10^{-4}

25Y-35 = 498
= 4.98×10^{2}

25Y-36 = 52.9
= 5.29×10^{1}

25Y-37 = 4.55
= 4.55×10^{0}

25Y-38 = 7.53×10^{-48}

2024 – 2025 UIL MS Calculator Test B Answer Key

25Y-39 = 730000
= 7.30×10^{5}

25Y-40 = 0.192
= 1.92×10^{-1}

25Y-41 = 4.05×10^{9}

25Y-42 = 7.63×10^{6}

25Y-43 = 1.17
= 1.17×10^{0}

25Y-44 = 4760
= 4.76×10^{3}

25Y-45 = 39900
= 3.99×10^{4}

25Y-46 = 7.23
= 7.23×10^{0}

25Y-47 = 36.9
= 3.69×10^{1}

25Y-48 = 6.62
= 6.62×10^{0}

25Y-49 = 0.0000175
= 1.75×10^{-5}

25Y-50 = 56.6
= 5.66×10^{1}

25Y-51 = 1.17
= 1.17×10^{0}

25Y-52 = 6.75×10^{-8}

25Y-53 = 0.0194
= 1.94×10^{-2}

25Y-54 = -96.7
= -9.67×10^{1}

25Y-55 = 0.000387
= 3.87×10^{-4}

25Y-56 = 2.76
= 2.76×10^{0}

25Y-57 = -50.5
= -5.05×10^{1}

25Y-58 = -1.67
= -1.67×10^{0}

25Y-59 = 4.63
= 4.63×10^{0}

25Y-60 = 89.0
= 8.90×10^{1}

25Y-61 = 8.54×10^{12}

25Y-62 = 0.00371
= 3.71×10^{-3}

25Y-63 = -5800
= -5.80×10^{3}

25Y-64 = -5.46
= -5.46×10^{0}

25Y-65 = 0.00164
= 1.64×10^{-3}

25Y-66 = 0.988
= 9.88×10^{-1}

25Y-67 = 0.261
= 2.61×10^{-1}

25Y-68 = -0.553
= -5.53×10^{-1}

25Y-69 = 0.565
= 5.65×10^{-1}

25Y-70 = 1.07
= 1.07×10^{0}

25Y-71 = -23.1
= -2.31×10^{1}

25Y-72 = 0.0779
= 7.79×10^{-2}

25Y-73 = 0.688
= 6.88×10^{-1}

25Y-74 = 273
= 2.73×10^{2}

25Y-75 = 8.94
= 8.94×10^{0}

25Y-76 = 0.00253
= 2.53×10^{-3}

25Y-77 = -1000
= -1.00×10^{3}

25Y-78 = 4.39
= 4.39×10^{0}

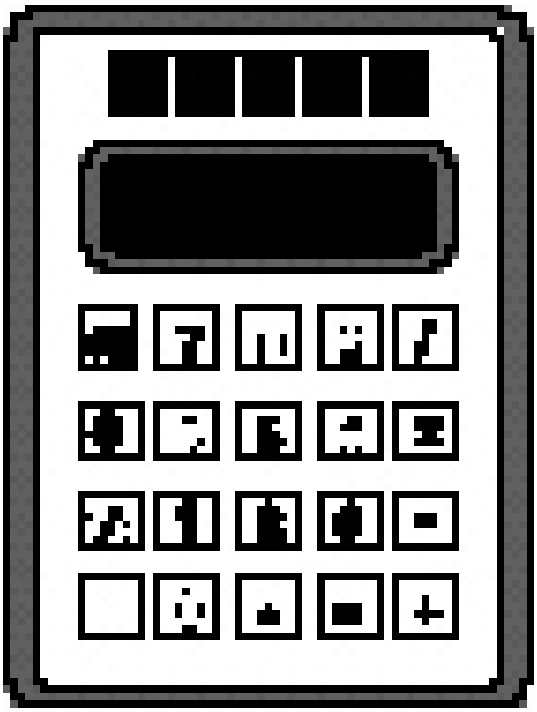
25Y-79 = 88800
= 8.88×10^{4}

25Y-80 = -0.115
= -1.15×10^{-1}

SPRING DISTRICT 2024-2025

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.*, 1.23x10*, $1.23x10^{0}$*
$1.23x10^{1}$, $1.23x10^{01}$, .0190, 0.0190, $1.90x10^{-2}$

Incorrect: 12.30, 123.0, $1.23(10)^{2}$, $1.23 \cdot 10^{2}$, $1.230x10^{2}$,
$1.23*10^{2}$, 0.19, $1.9x10^{-2}$, $19.0x10^{-3}$, 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.

2024 – 2025 UIL MS Calculator Test C

25Z–1. 18.9 + 14.5 ---------- 1=_____

25Z–2. 26 + 17 – 27 ---------- 2=_____

25Z–3. –196 + 76.9 + 151 ---------- 3=_____

25Z–4. 57 – 35 – 36 + 53 ---------- 4=_____

25Z–5. 81 + 343 – 241 – 238 ---------- 5=_____

25Z–6. 390 + 653 – 340 – 654 + 651 ---------- 6=_____

25Z–7. 0.568 + 1.77 – 1.59 + 1.81 + 1.93 ---------- 7=_____

25Z–8. (–0.482 + π – 1) – (1.22 + 0.761) ---------- 8=_____

25Z–9. 174 x 450 x 535 ---------- 9=_____

25Z–10. 12.7 x 965 x 1380 x 3110 ---------- 10=_____

25Z–11. What is sum of eighty-seven point five, twenty-two and one-third and four pi? ---------- 11=_____

25Z–12. If the Texas Math and Science Coaches Association (TMSCA) was founded September 1981, how old is the TMSCA organization in November 2024?---------- 12=_____yrs(integer)

25Z–13. To replace the blade on my lawn mower, I was told it would cost me $71.49. If the labor cost for blade replacement is $45.50, how much did the new blade cost?---------- 13=$_____

25Z–14. $221/[170 \times 92 \times 89]$ ---------- 14=_____

25Z–15. $(56/89)[46 - 77]$ ---------- 15=_____

25Z–16. $\left[\frac{70}{133}\right][(397/469) + 0.652]$ ---------- 16=_____

25Z–17. $\{(299)(34 - 73)(307)\} - 2.29 \times 10^{6}$ ---------- 17=_____

25Z–18. $\frac{[0.455/(0.402)]/0.0129}{(39.6 \times 76.2)(20.6)}$ ---------- 18=_____

25Z–19. $\left[\frac{(2860/1210) - (1010/1240)}{0.00653/0.00299}\right]$ ---------- 19=_____

25Z–20. $\frac{48.7 + 182 + 106}{(1.36 \times 10^{-4})(0.116)(0.642)}$ ---------- 20=_____

25Z–21. $\frac{(0.0105)(0.345)}{3.46}(0.00208 - 0.00211)$ ---------- 21=_____

25Z–22. $\frac{(80.1 + 36.8 - 95.6)}{\{(0.00633 - 0.00143)/(3.66 \times 10^{-4})\}}$ ---------- 22=_____

25Z–23. $\frac{[-(4280 + 2820)(3550 - 3560)]}{(1.25 \times 10^{-4}/(0.348))}$ ---------- 23=_____

25Z–24. Mike charges $85/hr for his work as an electrician. If a customer needs $429.99 worth of equipment installed and it takes Mike 4.75 hours to complete the installation, how much does Mike charge the customer? Note that an 8½% sales tax on the equipment only is included in the total charge. ---------- 24=$_____

25Z–25. Maria and her two girlfriends decided to go to an outdoor concert in July. The concert tickets were $12.75 each, the nachos for each girl cost $7.50 each, and the soft drinks cost each girl cost $4.50 each. If the girls took public transportation to the concert, and it cost $3.75 each roundtrip, what was the total cost for all the girls to go to the concert? 25=$_____

25Z–26. Li drove 5.9 miles to his favorite gas station and filled up his car's gas tank. He then drove 60.7 miles to see his brother. He then drove 102 miles to visit his sister. Li then drove back home on the exact same route. The next day, he drove back to the same gas station where he filled up his car earlier and put in 12.247 gallons of fuel. What is his car's miles per gallon (mpg) usage? ---------- 26=_____ mpg

25Z–27. $(3.99\text{x}10^{-4})[(12.6/4.99)(0.154 + 0.0633)]$ ---------- 27=_____

25Z–28. $\dfrac{(210 + 222)(2.87 + 7.86)}{(2.57\text{x}10^{12})}$ ---------- 28=_____

25Z–29. $\dfrac{(3.54\text{x}10^{9}) + (5.73\text{x}10^{9})}{(-1.18)(3.24) - 1.42}$ ---------- 29=_____

25Z–30. $\dfrac{1}{-0.172} + \dfrac{1}{(0.122 - 0.237)}$ ---------- 30=_____

25Z–31. $\dfrac{1}{-0.472} + \dfrac{1}{(\pi)(0.436 - 0.639)}$ ---------- 31=_____

25Z–32. $\dfrac{(28.5 + 10)}{(1.11\text{x}10^{11})}$ ---------- 32=_____

25Z–33. $\left[\dfrac{1/162}{1/200}\right][1.14\text{x}10^{6}]$ ---------- 33=_____

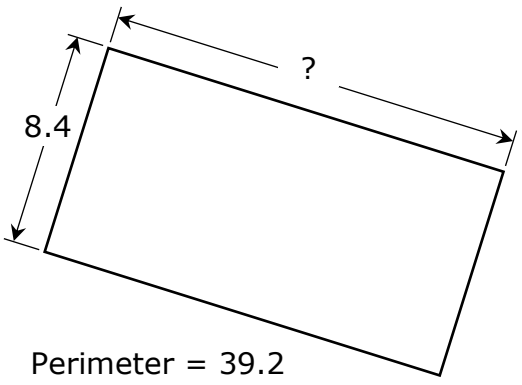
25Z–34. $\dfrac{1}{40.9} - \dfrac{1}{(11 + 85.6)}$ ---------- 34=_____

25Z–35. A measuring cup placed underneath a leaky faucet collected 5.75 ounces of water in 1¾ hours. At this rate, how long will it take the leaky faucet to leak 5 gallons of water? ---------- 35=_____ hrs

25Z–36. On one of the TxDot highway marquees, I noticed that it stated that the next town was 12 miles and 15 minutes. What average speed, in miles per hour (mph), would I need to be driving to accomplish that feat? ---------- 36=_____ mph

25Z-37.

RECTANGLE

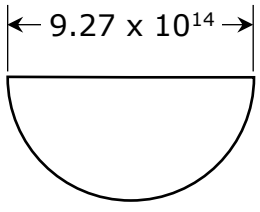


Perimeter = 39.2

25Z-37=_____

25Z-38.

SEMICIRCLE



Area = ?

25Z-38=_____

25Z–39. $\sqrt[4]{\dfrac{144 + 594}{0.165 - 0.0573}}$ ---------- 39=_____

25Z–40. $\dfrac{(37200 + 39300)^3}{(0.253 - 0.693)^2}$ ---------- 40=_____

25Z–41. $\left[\dfrac{292 + (1/(0.00188))}{(861/266) - 2.14}\right]^2$ ---------- 41=_____

25Z–42. $(1/(0.038))(11100 - 7870)^2$ ---------- 42=_____

25Z–43. $(13000)\sqrt{1510 + 2210 + 6650}$ ---------- 43=_____

25Z–44. $\sqrt{11.3} + \sqrt{17.3 + 42.8} - (\pi)\sqrt{37.6}$ ---------- 44=_____

25Z–45. $(57100)\sqrt[4]{612 + 344 - 248}$ ---------- 45=_____

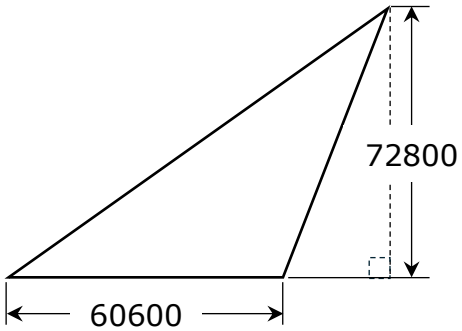
25Z–46. $\dfrac{1}{\sqrt{1070 + 832 + 1310}} + \left(\dfrac{1}{\sqrt{29.6}}\right)^2$ ---------- 46=_____

25Z–47. A twelve-foot-long pole, on level ground, leaned against a building. If the top of the pole reached eight feet above the ground, what angle did the ladder make with the building? ---------- 47=_____deg

25Z–48. The minute-hand of an analog clock is 6.25” long while the hour-hand is 2.73” long. At exactly 9 o’clock, what is the shortest distance between the end-tips of the clock hands? ---------- 48=_____”

25Z-49.

TRIANGLE

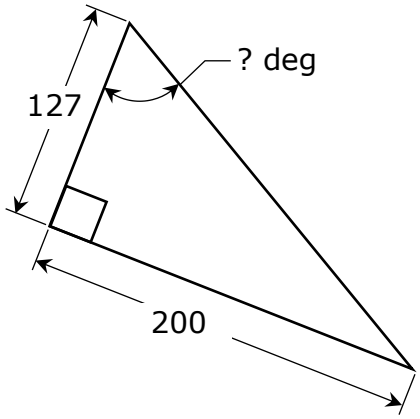


Area = ?

25Z-49=_____

25Z-50.

RIGHT TRIANGLE



25Z-50= _____deg

25Z–51. $\sqrt{\frac{0.051}{(0.022)(0.36)}} + \frac{(6.32\text{x}10^{5} - 7.33\text{x}10^{5})}{(6810 + 9960)}$ ---------- 51=_____

25Z–52. $\left[\frac{127 - 89.2 + \sqrt{2.82\text{x}10^{6}/2120}}{-6.14 + 18.6}\right]^{3}$ ---------- 52=_____

25Z–53. $\left[\frac{442 + 212 + \sqrt{2.58\text{x}10^{5} + 70000}}{225/341}\right]^{3}$ ---------- 53=_____

25Z–54. $\sqrt{\frac{1/(43.2 - 15.3)}{(7.82)(234 + 388)^{6}}}$ ---------- 54=_____

25Z–55. $(7120)(2.97\text{x}10^{9})^{1/2} - [(2.31\text{x}10^{12})(9.70\text{x}10^{12})]^{1/3}$ --- 55=_____

25Z–56. $\sqrt{\frac{(36100)(4600)}{(60800)(21800)}} - 0.284 + 0.133$ ---------- 56=_____

25Z–57. $\sqrt{\frac{(149)(3930)}{(545) + (1610)}} - 17.1$ ---------- 57=_____

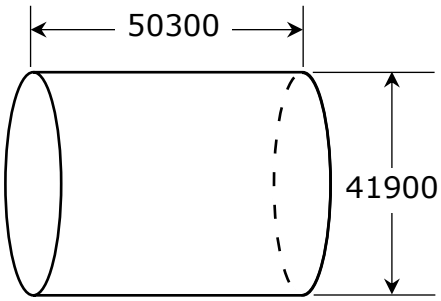
25Z–58. $\sqrt{\frac{(21.1)(63.9)}{(20) + (27.5)}} + 1/(0.716)^{5}$ ---------- 58=_____

25Z–59. Between 2022 and 2023 the city of Georgetown, Texas grew from 87,062 to 96,312. What percent increase did this represent? ----- 59=_____ %

25Z–60. According to an article from the Animal Health Foundation, a formula to convert a cat's age, in years, to a human age, in years, involves using 15 human-years to represent the cat's first year of life, then adding 10 human-years to represent the second year of the cat's life and then adding 4 human-years for every year of the cat's life after that. According to this formula, what is the human age equivalent for Missy, our 19-year-old cat? ---------- 60=_____ years

25Z-61.

RIGHT CIRCULAR CYLINDER

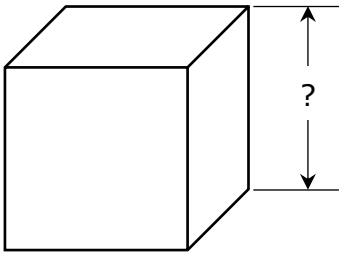


Volume = ?

25Z-61=_____

25Z-62.

SOLID CUBE



Total Surface Area = 95700000

25Z-62=_____

25Z–63. $\frac{4!}{24!}$ ---------- 63=_____

25Z–64. (deg) (15400 + 23700)tan(36.2°) ---------- 64=_____

25Z–65. $(143 - \pi)e^{0.577}$ ---------- 65=_____

25Z–66. (deg) (48700 – 55000)cos(1.56°) + 1130 ---------- 66=_____

25Z–67. (deg) cos(10.9° – 6.8°) + 0.222 ---------- 67=_____

25Z–68. (deg) $\frac{\cos(29.4°)}{2.08 + 1.58}$ ---------- 68=_____

25Z–69. (rad) cos[(52.5 – 63.1)(0.492)] ---------- 69=_____

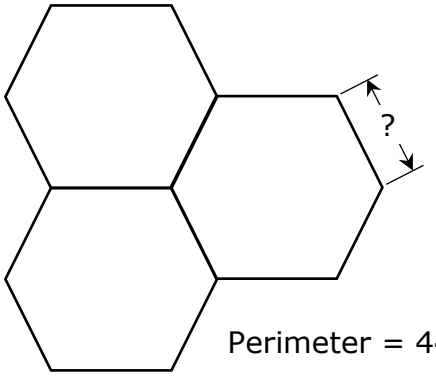
25Z–70. $(234 - 32.4 + 86.2)^{5/3}$ ---------- 70=_____

25Z–71. On July 10, 1913, the hottest recorded temperature in the US was reported to be in Furnace Creek (Greenland Ranch), California. If this temperature was listed as 56.7 °C, what is this temperature in degrees Fahrenheit (°F)?---------- 71=_____°F

25Z–72. A 44 Lb. bag of cat food that costs $28.77 has bits of cat food that measure 4 bits of food per gram. If there are about 453.592 grams per pound, how much did each bit of cat food cost? ---------- 72=_____¢

25Z-73.

IDENTICAL REGULAR HEXAGONS

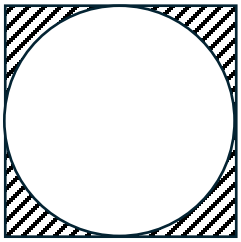


Perimeter = 444

25Z-73=_____

25Z-74.

SQUARE AND CIRCLE



Area of Circle = 100

Hatched area = ?

25Z-74=_____

25Z–75. $\dfrac{1.84 + \sqrt{(5.26)(5.32)} + (\pi)(1.78)}{\sqrt{\sqrt{0.0063 + 0.0165}}}$ ---------- 75=_____

25Z–76. $\dfrac{\text{Log}(1.91\text{x}10^{9} + 7.91\text{x}10^{8})}{1.8}$ ---------- 76=_____

25Z–77. $\text{Log}(32.3 + 36.5 + 22.6)$ ---------- 77=_____

25Z–78. $\text{Ln}\left[\dfrac{4.16 + 3.78 + 11.1}{976 - 193 - 371}\right]$ ---------- 78=_____

25Z–79. $2 + 4 + 6 + \ldots + 784$ ---------- 79=_____

25Z–80. $-\dfrac{1}{(6.8)} + \dfrac{1}{3(6.8)^3} - \dfrac{1}{5(6.8)^5} + \dfrac{1}{7(6.8)^7}$ ---------- 80=_____

2024 – 2025 UIL MS Calculator Test C Answer Key

25Z-1 = 33.4
= 3.34×10^{1}

25Z-2 = 16.0
= 1.60×10^{1}

25Z-3 = 31.9
= 3.19×10^{1}

25Z-4 = 39.0
= 3.90×10^{1}

25Z-5 = -55.0
= -5.50×10^{1}

25Z-6 = 700
= 7.00×10^{2}

25Z-7 = 4.49
= 4.49×10^{0}

25Z-8 = -0.321
= -3.21×10^{-1}

25Z-9 = 4.19×10^{7}

25Z-10 = 5.26×10^{10}

25Z-11 = 122
= 1.22×10^{2}

25Z-12 = 43
Integer Answer

25Z-13 = 25.99
Dollar Answer

25Z-14 = 0.000159
= 1.59×10^{-4}

25Z-15 = -19.5
= -1.95×10^{1}

25Z-16 = 0.789
= 7.89×10^{-1}

25Z-17 = -5.87×10^{6}

25Z-18 = 0.00141
= 1.41×10^{-3}

25Z-19 = 0.709
= 7.09×10^{-1}

25Z-20 = 3.32×10^{7}

25Z-21 = -3.14×10^{-8}

25Z-22 = 1.59
= 1.59×10^{0}

25Z-23 = 1.98×10^{8}

25Z-24 = 870.29
Dollar Answer

25Z-25 = 85.50
Dollar Answer

25Z-26 = 27.1
= 2.71×10^{1}

25Z-27 = 0.000219
= 2.19×10^{-4}

25Z-28 = 1.80×10^{-9}

25Z-29 = -1.77×10^{9}

25Z-30 = -14.5
= -1.45×10^{1}

25Z-31 = -3.69
= -3.69×10^{0}

25Z-32 = 3.47×10^{-10}

25Z-33 = 1.41×10^{6}

25Z-34 = 0.0141
= 1.41×10^{-2}

25Z-35 = 195
= 1.95×10^{2}

25Z-36 = 48.0
= 4.80×10^{1}

25Z-37 = 11.2
= 1.12×10^{1}

25Z-38 = 3.37×10^{29}

2024 – 2025 UIL MS Calculator Test C Answer Key

25Z-39 = 9.10
= 9.10×10^{0}

25Z-40 = 2.31×10^{15}

25Z-41 = 564000
= 5.64×10^{5}

25Z-42 = 2.75×10^{8}

25Z-43 = 1.32×10^{6}

25Z-44 = -8.15
= -8.15×10^{0}

25Z-45 = 295000
= 2.95×10^{5}

25Z-46 = 0.0514
= 5.14×10^{-2}

25Z-47 = 48.2
= 4.82×10^{1}

25Z-48 = 6.82
= 6.82×10^{0}

25Z-49 = 2.21×10^{9}

25Z-50 = 57.6
= 5.76×10^{1}

25Z-51 = -3.49
= -3.49×10^{0}

25Z-52 = 212
= 2.12×10^{2}

25Z-53 = 6.43×10^{9}

25Z-54 = 2.81×10^{-10}

25Z-55 = 1.06×10^{8}

25Z-56 = 0.203
= 2.03×10^{-1}

25Z-57 = -0.616
= -6.16×10^{-1}

25Z-58 = 10.6
= 1.06×10^{1}

25Z-59 = 10.6
= 1.06×10^{1}

25Z-60 = 93.0
= 9.30×10^{1}

25Z-61 = 6.94×10^{13}

25Z-62 = 3990
= 3.99×10^{3}

25Z-63 = 3.87×10^{-23}

25Z-64 = 28600
= 2.86×10^{4}

25Z-65 = 249
= 2.49×10^{2}

25Z-66 = -5170
= -5.17×10^{3}

25Z-67 = 1.22
= 1.22×10^{0}

25Z-68 = 0.238
= 2.38×10^{-1}

25Z-69 = 0.482
= 4.82×10^{-1}

25Z-70 = 12500
= 1.25×10^{4}

25Z-71 = 134
= 1.34×10^{2}

25Z-72 = 0.0360
= 3.69×10^{-2}

25Z-73 = 37.0
= 3.70×10^{1}

25Z-74 = 27.3
= 2.73×10^{1}

25Z-75 = 32.7
= 3.27×10^{1}

25Z-76 = 5.24
= 5.24×10^{0}

25Z-77 = 1.96
= 1.96×10^{0}

25Z-78 = -3.07
= -3.07×10^{0}

25Z-79 = 154000
= 1.54×10^{5}

25Z-80 = -0.146
= -1.46×10^{-1}