1:   $(2.25 \times 0.69) - 0.635$ --- 1=_____

2:   $0.788 - 0.303 + 0.83 / 0.752$ -- 2=_____

3:   $(1.31 - 0.21 - 0.422) \times (0.867 - 0.234)$ ------------------------------ 3=_____

4:   $\dfrac{39.3 + 0.206}{(0.382)(0.322)} + (0.178 + 8.92)$ --- 4=_____

5:   $\dfrac{(752 - 86.8)(9.84 + 688)}{\{(2.29)(7.51)(42.3)\}}$ --- 5=_____

6:   What is the sum of 31.8 and the square root of 81.3? -------------------- 6=_____

7:   What is the base-10 logarithm of the product of 43.7 and 192? ------------ 7=_____

8:   What is the negative reciprocal of the square of 0.357? ------------------ 8=_____

9.   PARALLELOGRAM

14.8

23.1

Area = ?

9. _____

10.   CIRCLE

D = ?

Circumference = 3970

10. _____

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11: $\dfrac{(-2.94)(109) + (7.27)(-73) + 39.4}{(111)(-9.19) - (-333)(6.15)}$ -------------------------------- 11=_____

12: $\dfrac{\{(3.35) - (-15.3) - (-2.21)(7.54)\}(196)}{(6.53 + 2.89) + (-580 + 768 + 37.4)}$ ----------------------------- 12=_____

13: $\dfrac{\{(433)(86.9 + 34.6)(54.9)(8950)\} - (7200 + 34.1)}{(-37.9)(-406 + 527)(72.6)}$ ------------------- 13=_____
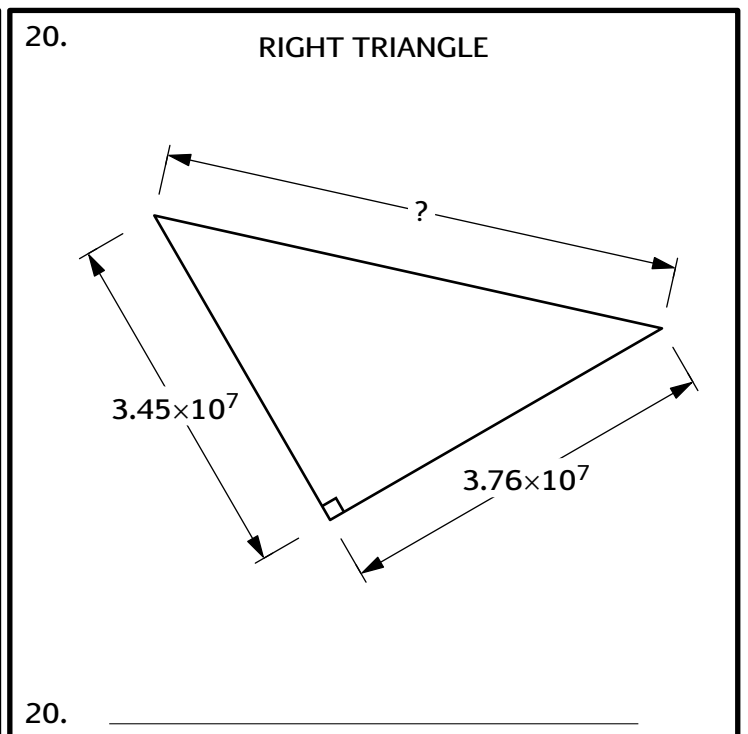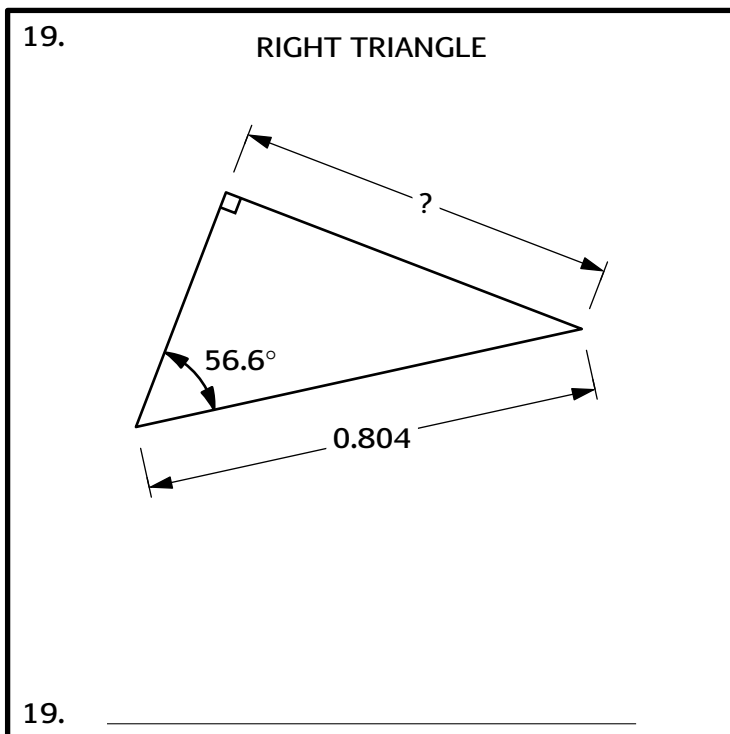
14: $\dfrac{(0.316)(-0.0461 + 0.564)(0.00638 + 0.455)(0.453 + 0.0822)}{(-0.953 - 0.594)(-0.255)(0.0048)(0.0454 + 0.337)}$ ---------- 14=_____

15: $\dfrac{(3.41 \times 10^{-8}) + (1.04 \times 10^{-9}) + (1.77 + 47.2)(1.65 \times 10^{-10})}{(422)(708)(-2710 + 83.7)}$ ----------- 15=_____

16: Two dozen hot dogs cost \$28.08. What is the cost per hot dog? ------------ 16=\$_____

17: A race course is 6.34 mi long. How long is the course in kilometers? ------- 17=_____ km

18: A running back ran 84 yd in the first half of a game and 69 yd in the second half. What percent of his total yards were gained in the first half? ----------------- 18=_____ %

---

19. RIGHT TRIANGLE

56.6°

?

0.804

19. _____

---

20. RIGHT TRIANGLE

3.45×10^7

?

3.76×10^7

20. _____

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21: $\dfrac{1}{7.76 + 8.21} + \dfrac{1}{89.3 + 9.43} - \dfrac{1}{21.4}$ ----------------------------------- 21=_____

22: $\left[\dfrac{(0.717 - 0.288)^2}{6.45} + 3.93\right]^2 - \sqrt{\dfrac{0.898}{0.0856}}$ ------------------------------ 22=_____

23: $\left[\dfrac{-309}{-4710 - 469}\right]^2 + \sqrt{\dfrac{\pi - 5.02}{169 - 474}}$ ----------------------------------- 23=_____

24: $\left[-\sqrt{2.44} - 8.08\right]^2 \times \left[-\sqrt{0.378} + 48.9\right]^2 \times \sqrt{8.49 \times 10^4}$ ----------------- 24=_____

25: $\sqrt{(96.7)(5.88) / (2.07)} + [(9.39)(-0.566)]^2$ -------------------------- 25=_____
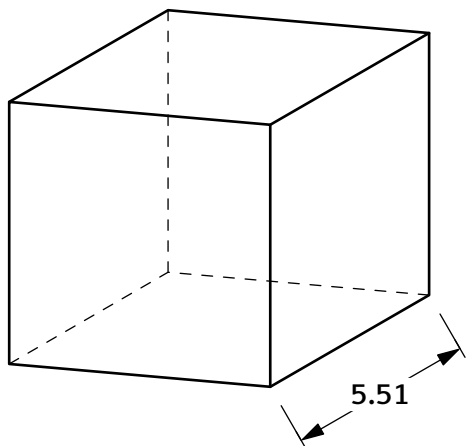
26: A fire log burns at a constant rate. Christy checked the log after one hour and it was 8.78 in long. Ninety minutes later, she checked the log and it measured 6.56 in long. How long was the log before ignition? ------------------------------ 26=_____ in

27: Elise needs to buy exactly 124 chicken nuggets. Nuggets are sold in boxes of 9, at \$5.76 each, and in boxes of 5, at \$4.32 each. What is the least total cost possible for her nuggets? --- 27=\$_____

28: Using historical census data on Texas population, a quadratic model gives the estimated population P (in millions) at x years after 1960 as $P = 0.00314x^2 + 0.158x + 9.53$. The actual population in 2020 was 29.1 million. Compute the percent error in actual and estimated populations for 2020. ---------------------------- 28=_____ %
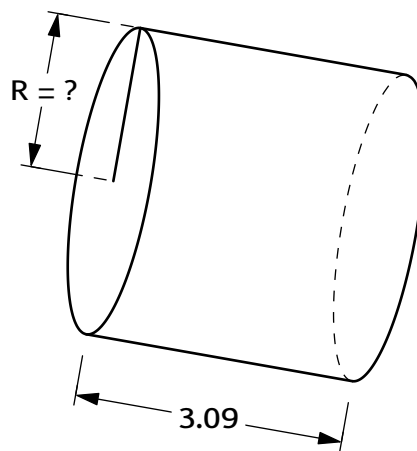
29.

CUBE

5.51

Total Surface Area = ?

29. _____

30.

CYLINDER

R = ?

3.09

Volume = 30.8

30. _____

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31: $\sqrt{\dfrac{1/(0.047 - 0.036)}{(1.13)(8.46 - 8.20)}} + \left(9.53 \times 10^{-3}\right)^2 \left(3.72 \times 10^6\right)$ ------------------ 31=_____

32: $\sqrt{\dfrac{\sqrt{0.244 + 0.0761}}{0.943}} \times \left[\dfrac{1/(0.00259) - 1/(0.42 - 0.00279)}{\left(0.00612 - 0.0424 - (0.733)^2\right)}\right]$ ------------ 32=_____

33: $\dfrac{[(8.34)(7.94) + (764 / 2.88)]^{1/2}}{(5.28)^2 + 2(5.28)(4.23) + (4.23)^2}$ ----------------------------------- 33=_____

34: $\dfrac{\left\{6.42 \times 10^{-10}\right\} - \left\{6.57 \times 10^{-8}\right\} + \left\{4.57 \times 10^{-9}\right\}}{7.68 \times 10^{-8}} - [0.541 + 0.17]^{1/2}$ ----- 34=_____

35: $\dfrac{\left[\dfrac{(60.5)(58.2)}{-174 + 8.36 + 69.7}\right]^2 - \sqrt{\dfrac{-1.19 + 96.7 + 70.3}{\left(4.16 \times 10^{10}\right)^2}}}{\left\{(-8.61) / (884)\right\}^2}$ -------------------- 35=_____

36: The frequency of a musical note t half-steps above a fundamental note is $2^{t/12}$ times the fundamental note's frequency. The note D3 open string on a guitar has a frequency of 147 Hz. What is the frequency of B♭3, the note 8 half-steps above D3? --- 36=_____ Hz

37: A water trough for animals is in the shape of a semicircular prism. The diameter is 28.56 in and the length is 81.25 in long. There are 103.97 gal of water in the trough. How high does the water level rise from the bottom of the trough? ----- 37=_____ in(SD)

38: A 10-foot diameter merry-go-round spins at 8 rev/min. The center of the merry-go-round is 12 ft from the bench. Johnny gets on the ride at the point closest to the bench. How far from the bench is Johnny 11.7 s after he got on? ------------ 38=_____ ft

39. SCALENE TRIANGLE AND CIRCLE

39. _____

40. SCALENE TRIANGLES

40. _____
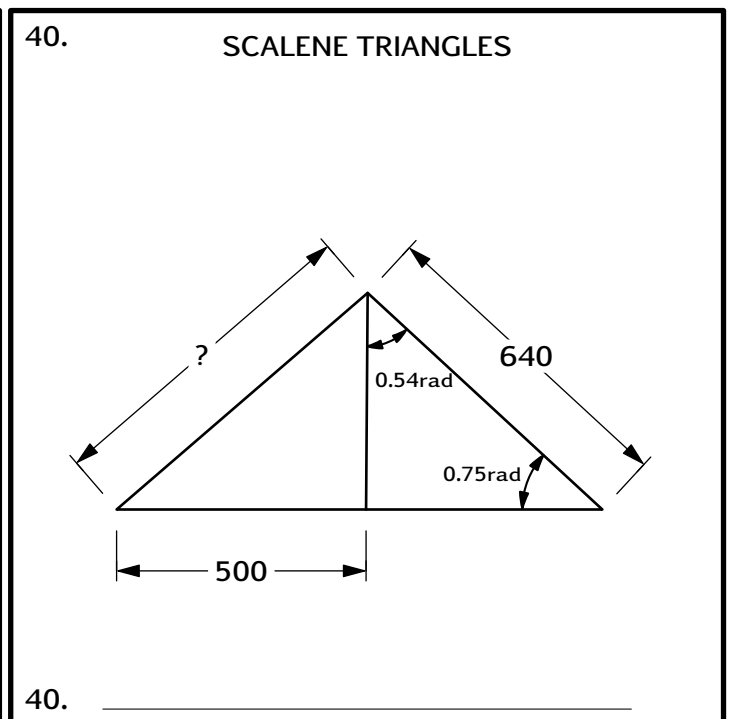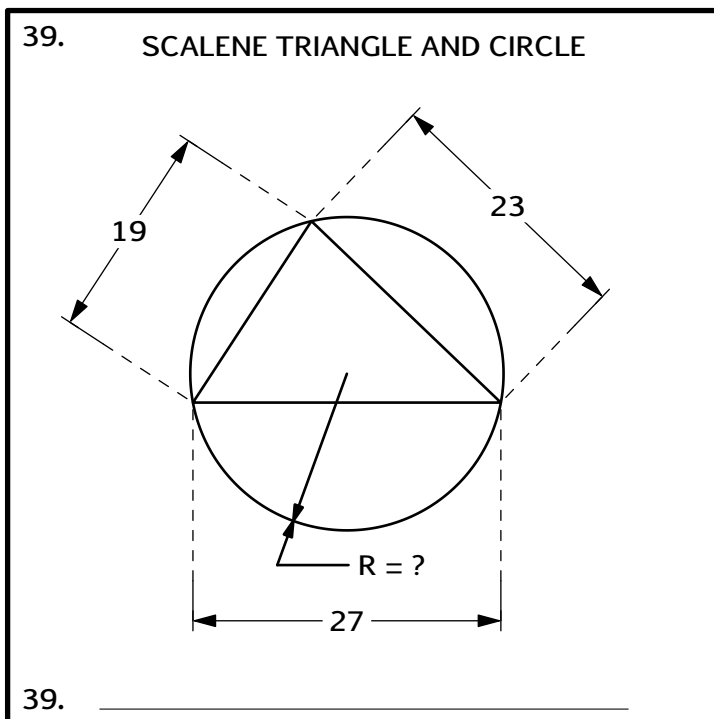
41:     $(0.295) + (0.232)\,e^{+0.897}$ --- 41=_____

42:     $\text{Ln}[85.9 - 9.71 + (36.8 / 5.65)]$ -------------------------------------- 42=_____

43:     $10^{\{(-70.8)/(-31.2)\}} \times \left[\dfrac{\sqrt{8.6 + 9.58}}{(1.92 - 9.72)}\right]$ ----------------------------- 43=_____

44:     $1/\left\{(0.0651)^{0.482}\right\} + (5.64 - 0.0587)^{1/3}$ ------------------------------- 44=_____
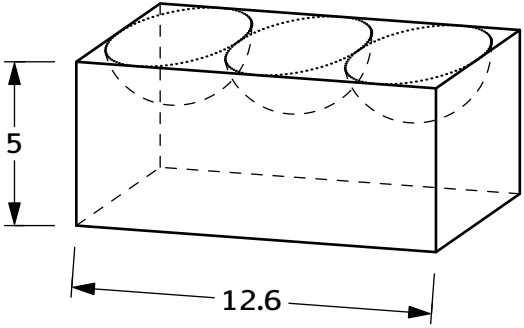
45:     $(\text{deg})\quad \cos\left[90° \times \dfrac{(12.1)}{(0.495)}\right] + \sin[119° - 152°]$ ---------------------- 45=_____

46:     An 8-m diameter swimming pool requires 2.7 large bottles of chemical treatment. How many small bottles of treatment are needed for a pool with diameter 7.2 m, of the same depth, where the small bottles contain 60% of the volume of the large bottles? -- 46=_____ bottles

47:     A basketball player practices shots every 3 feet from the basket, starting 3 feet away. Her percent make rates are 98%, 93%, 89%, 80%, and 74%. What percent of her shots can she expect to make from 20 feet away? ------------------ 47=_____ %

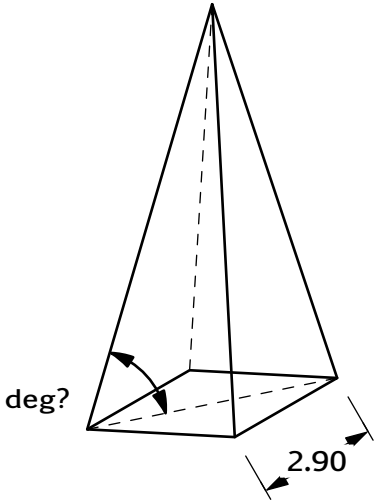48:   Find x, $x > 0$, where $\text{Ln}(x^2 - 2) = \dfrac{1}{x^2}$. ------------------------------------- 48=_____

49.
RECTANGULAR PRISM WITH CONGRUENT HEMISPHERIC CAVITIES

5

12.6

Volume = ?

49. _____

50.
SQUARE-BASED PYRAMID

deg?

2.90

Lateral Surface Area = 46.2

50. _____

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51: $\dfrac{(28.1)\,10^{-(0.673 + 0.671)}}{74 - \pi}$ -- 51=_____

52: $\dfrac{e^{+(0.746)} + e^{-(0.587)}}{(3.47)\,\text{Ln}\{(0.492)\,/\,(0.521)\}}$ -- 52=_____

53: $\dfrac{(0.156)^{0.53} - (0.774)^{-(0.387)}}{\{1/(2110\,/\,98200)\}^{1/3}}$ ------------------------------------ 53=_____

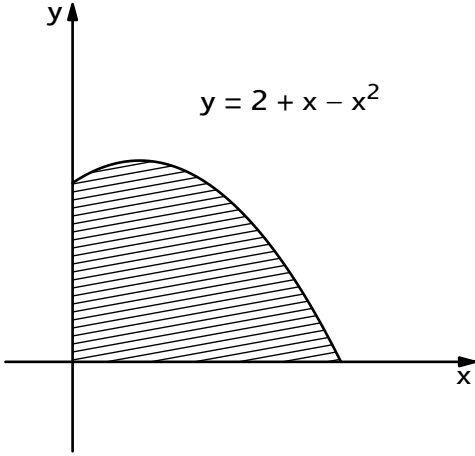54: $\text{Ln}[0.865] - \text{Ln}[0.29] + (0.548)\,\text{Ln}[0.922 + 0.284] + (0.987)\,\text{Ln}[0.223]$ -- 54=_____

55: (rad) $\text{arccos}\left[\dfrac{(2.14)(0.725)}{(7.95)(0.501)}\right] - (-0.151)(-0.418)$ --------------------- 55=_____

56: What is the slope of the tangent line to $f(x) = \dfrac{2x - 3}{x}$ at the point $(1, -1)$? --- 56=_____

57: Revenue at a company is changing at the rate $\dfrac{dR}{dt} = \dfrac{5}{\sqrt{t}}$ millions of dollars (M$) per month. There were $7.2 million in revenue the first month of sales ($t = 0$). How much revenue is expected during the third month? [Answer with 3 significant digits] -- 57=_____ M$

58: Find the determinant of **PQ** when $\mathbf{P} = \begin{bmatrix} 4.7 & -1.2 \\ -0.3 & 5.6 \end{bmatrix}$ and $\mathbf{Q} = \begin{bmatrix} 8 & 3 \\ 4 & -5 \end{bmatrix}$. ------- 58=_____

59.

SOLID OF REVOLUTION
(y=0)

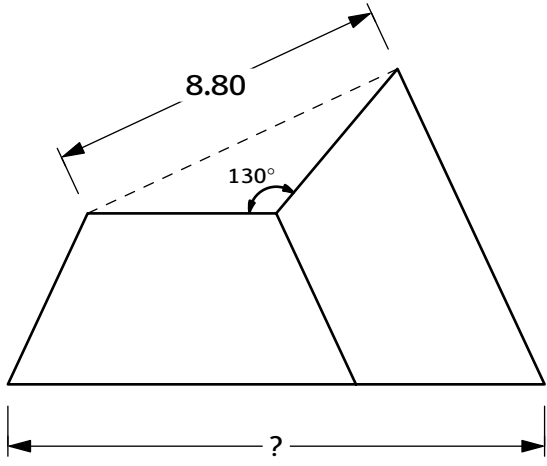$y = 2 + x - x^2$

Volume = ?

59. _____

60.

CONGRUENT ISOSCELES TRAPEZOIDS

8.80

130°

?

60. _____

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61: A moped accelerates from 12 mph to 28 mph in 16 seconds. What distance is covered by the moped during this acceleration? ------------------------------ 61=_____ft

62: Two friends play a game where one person chooses an integer from 1 to 88, inclusive, at random, and the other person guesses the number. What is the probability of the second person guessing correctly 250 times in a row? ----------- 62=_____

63: A cannon launches a ball with initial velocity of 220 ft/s at an angle with the horizontal of 52.5° from the ground. The target castle is 1720 ft away from the cannon. How short will the cannonball fall from the castle? --------------------- 63=_____ft

---

64. CIRCLE AND RECTANGLE

18.6

R

B

A

R/2

AB = ?

64. _____

---

65. SQUARE AND EQUILATERAL TRIANGLE

822

a = ?

a > 300

Total Area = 360000

65. _____

66: $10^{\text{Log}\{(755) + (77.1)(323) - (69.2)\}}$ ------------------------------------- 66=_____

67: (rad) $\dfrac{\tan(5.08) - \tan(1.52)}{1 + \tan(5.08)\tan(1.52)}$ ------------------------------------- 67=_____

68: (deg) $\left[\cos^2(21°) - \sin^2(21°)\right] \times \dfrac{\tan(21°)}{1 - \tan^2(21°)}$ -------------------- 68=_____

69: $1 - 0.159 + (0.159)^2 - (0.159)^3 + (0.159)^4$ ------------------------- 69=_____

70: (rad) $\dfrac{\arcsin\left\{e^{-(0.904)/(0.386)}\sqrt{(-1770)/(-6540)}\right\}}{\left(1.55 + 0.725\sqrt{(99.2)(58.2)}\right)^2}$ ---------------- 70=_____