

2004 - 2005 TMSCA Middle School Calculator #16
State Championship

1. $8,150 + 6,443$ ----- 1= _____
2. $2,374 + 4,354 - 4,816$ ----- 2= _____
3. $72,120 - 4,380 + 3,921$ ----- 3= _____
4. $4,059/268 + 601$ ----- 4= _____
5. $6,175/846 + 4,552$ ----- 5= _____
6. $913/0.000242 - 7,850$ ----- 6= _____
7. $4.53 + 3.15 - 4.25 + 22.7$ ----- 7= _____
8. $1,815 + 137.2 - 241.2 + 353.1 + 607$ ----- 8= _____
9. $82.4 \times \pi \times 2.02$ ----- 9= _____
10. $3,704 \times 534 \times 287 \times 0.00388$ ----- 10= _____
11. What is the range of the following numbers; 99.6, 88.4, 33.2, 44.8, 89.7, 89.7, and 89.7? ----- 11= _____
12. What is the product of the square root of nineteen and the cube of eight? ----- 12= _____
13. The circumference of a circle is 3.14 feet. How long is that in inches? ----- 13= _____ inches

$$14. 3,112 - \frac{3,220}{0.113} + 32,100 \text{ ----- } 14 = \underline{\hspace{2cm}}$$

$$15. \left[\frac{0.00574 + 0.00475}{\pi - 2.15} \right] 4\pi \text{ ----- } 15 = \underline{\hspace{2cm}}$$

$$16. \frac{(5,817 - 258) / 4.59}{(7,350 / 5,370) + 35.6} \text{ ----- } 16 = \underline{\hspace{2cm}}$$

$$17. \frac{(5\pi / 0.0224)}{(0.155 / 0.127)} \text{ ----- } 17 = \underline{\hspace{2cm}}$$

$$18. \left[\frac{(388 / 0.0151) - (728 / 0.475)}{(6.14 - 812 - 417)} \right] \text{ ----- } 18 = \underline{\hspace{2cm}}$$

$$19. \left[\frac{(\pi / 0.00815)}{746 / 0.0194} \right] [425 + 235 - 527] \text{ ----- } 19 = \underline{\hspace{2cm}}$$

$$20. \left[\frac{(21.8 - 33.3)}{(24.9 - 45.8)} \right] \left[\frac{0.311}{0.411} \right] \text{ ----- } 20 = \underline{\hspace{2cm}}$$

$$21. \left[\frac{-(12,500 - 15,200)(2\pi - 12.1)}{(34.9 - 17.5)(45.7)} \right] \text{ ----- } 21 = \underline{\hspace{2cm}}$$

$$22. \frac{(577 - 41.8) / 0.328}{(815 / 520)} \text{ ----- } 22 = \underline{\hspace{2cm}}$$

$$23. \frac{(138 / 1.62)(125 - 574)(\pi)}{(35.2 / 24.1)} \text{ ----- } 23 = \underline{\hspace{2cm}}$$

24. What part of a day is 7 hours, 32 minutes and 45 seconds? ----- 24 =

25. Convert 7π radians to degrees. ----- 25 = degrees

26. If $f(x) = 2x + 7$ and $g(x) = 2x^2 + 4x - 1$, what is $f(g(5))$? ----- 26 =

27. $0.00123[(5.37 / 4.25)(2,440 / 431)]$ ----- 27= _____

28. $1,240[(0.00115 / 461)(165 + 254)]$ ----- 28= _____

29. $[(1,800)(25.2)]\pi / 131$ ----- 29= _____

30. $0.00134 + 1.15(8.50 \times 10^{-3}) - 0.00203$ ----- 30= _____

31. $\frac{(600 - 700)(4.21 - 5.22)}{1.85 \times 10^4}$ ----- 31= _____

32. $[2.66 \times 10^5 + 4.75 \times 10^5][196,000 - 178,000]$ ----- 32= _____

33. $\frac{\frac{1}{9.50}}{\frac{1}{3.07}} + \frac{\frac{1}{18.6}}{\frac{1}{(4.02 \times 10^2)}}$ ----- 33= _____

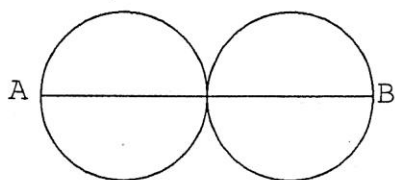
34. $\left[\frac{1}{2.21 \times 10^3} \right] - 3.04 \times 10^{-3}$ ----- 34= _____

35. It took Jim 2 hours to wax a car that was 10 feet long. Estimate the time that it would take Jim to wax a car that was 20 feet long with a similar shape. ----- 35= _____ hours

36. Back in 1989 the speed limit on the interstate was 55 mph. Today in Texas the speed limit from Junction to San Antonio is 75 mph in some places. What is the percent increase in mph? ----- 36= _____ %

37. CONGRUENT TANGENT CIRCLES

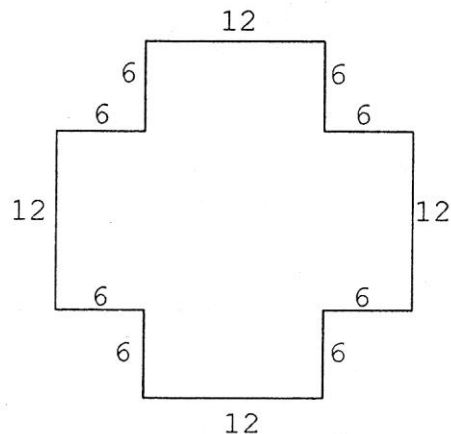
Circumference of one circle = 67



Length of AB = ?

37.= _____

38. POLYGON WITH 90° CORNERS



Area = ?

38.= _____

$$39. \frac{(3.11 \times 10^3 + 4.13 \times 10^3)^2}{(2.11 \times 10^3)^2} [1.25 \times 10^2] \text{-----} 39 = \underline{\hspace{2cm}}$$

$$40. \left[\frac{3}{4} \right] \left[\frac{12}{21} \right] \left[\frac{7}{36} \right] (2,650 - 3,770) \text{-----} 40 = \underline{\hspace{2cm}}$$

$$41. \sqrt{6,110 - 4,930} + \sqrt{8,320 - 3,170} \text{-----} 41 = \underline{\hspace{2cm}}$$

$$42. \sqrt{0.00407(902 - 863)} \text{-----} 42 = \underline{\hspace{2cm}}$$

$$43. \frac{1}{\sqrt{\pi - 1.15}} + \frac{1}{\sqrt{0.0343}} \text{-----} 43 = \underline{\hspace{2cm}}$$

$$44. \left[\frac{4,330 + \left(\frac{1}{8,240} \right)}{\left(\frac{1}{9,130} \right) + 180} \right]^2 \text{-----} 44 = \underline{\hspace{2cm}}$$

$$45. \frac{1}{\sqrt{3.44 \times 10^{-3}}} - \frac{1}{\sqrt{9.23 \times 10^{-3}}} \text{-----} 45 = \underline{\hspace{2cm}}$$

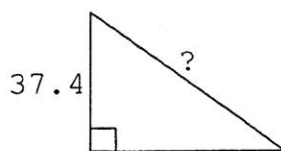
$$46. \sqrt{(3.44 \times 10^4)(-5,110 / 820)(7,010 - 9,080)} \text{-----} 46 = \underline{\hspace{2cm}}$$

47. The edge of an equilateral triangle is 24 cm. What is its area in square inches? ----- 47 = in²

48. What is the distance from (8,2) to (-3,5)? ----- 48 =

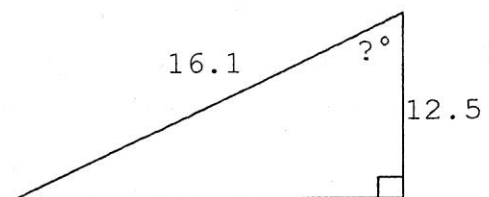
49. RIGHT TRIANGLE

Area = 525



49 =

50. RIGHT TRIANGLE



50 =

$$51. \frac{(0.00124 + 0.0214 + 0.445)^3}{\sqrt{1.71 + \pi + 82.1}} \text{-----} 51 = \underline{\hspace{2cm}}$$

$$52. \sqrt{\frac{174}{\pi(821)}} - \frac{(865 - 965)^2}{323 + 646} \text{-----} 52 = \underline{\hspace{2cm}}$$

$$53. \left[\left(17 \frac{1}{14} \right) \left(17 \frac{8}{17} \right) \left(62 \frac{3}{5} \right) \right]^3 \text{-----} 53 = \underline{\hspace{2cm}}$$

$$54. \frac{7\pi}{9} \left[\frac{1.58 + 84.4 - 92.3}{45.2 - 193 + 96.5} \right]^2 \text{-----} 54 = \underline{\hspace{2cm}}$$

$$55. \left[\frac{\sqrt{\sqrt{\sqrt{121 - 43.7}}}}{-(-387 - 81.7)} \right]^2 [1,580 + 240]^2 \text{-----} 55 = \underline{\hspace{2cm}}$$

$$56. \frac{741}{441} [7.24(8.81)^2]^3 \text{-----} 56 = \underline{\hspace{2cm}}$$

$$57. \sqrt[3]{\frac{828(5.17)(6,250)}{(7.45)(948)(7,650)}} + [13]^2 \text{-----} 57 = \underline{\hspace{2cm}}$$

$$58. \sqrt[3]{\frac{-(12.1)(19.3)(72.3)}{(211)(5.13)(42.6)}} \text{-----} 58 = \underline{\hspace{2cm}}$$

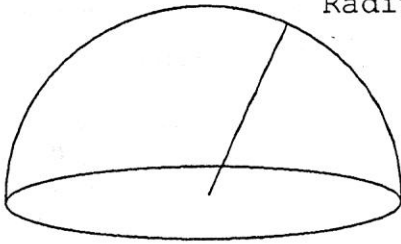
59. How many gallons will a sphere with a radius of 25 inches hold? ----- 59 = gallons

60. If the odds of winning are 6 to 4, what is the probability of winning? ----- 60 =

61.

HEMISPHERE

Radius = 12

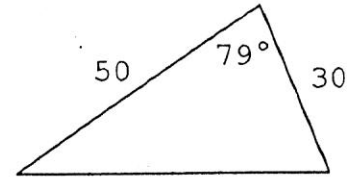


Total Surface Area = ?

61=_____

62.

SCALENE TRIANGLE



Area = ?

62=_____

$$63. \frac{6!}{(3!)(2!)} + \frac{(7! - 5!)}{3!} \text{-----} 63 = \text{_____}$$

$$64. \frac{(888 + \pi - e^{4.2})^5}{(\pi - e^{4.2} + 888)^4} \text{-----} 64 = \text{_____}$$

$$65. \left[\frac{((8.52 \times 10^5) \pi^8)}{e^6 - \pi^4} \right]^0 (3.15 \times 10^2)^0 (3.24 \times 10^{-1})^2 \text{-----} 65 = \text{_____}$$

$$66. (\text{deg}) 121 \tan(68^\circ) \cos(68^\circ) \text{-----} 66 = \text{_____}$$

$$67. (\text{rad}) 33 \tan(2\pi / 3) \tan(2\pi / 3) \text{-----} 67 = \text{_____}$$

$$68. (\text{deg}) \frac{\sin(14^\circ)}{\tan(14^\circ)} [9.88 \times 10^3] \text{-----} 68 = \text{_____}$$

$$69. (\text{rad}) \frac{\sin(\pi / 7)}{\tan(\pi / 7)} [\sin(\pi / 7)] \text{-----} 69 = \text{_____}$$

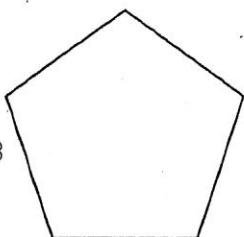
$$70. \left[(2.33) \frac{0.0754}{2\pi} \right]^{\frac{1}{2}} \text{-----} 70 = \text{_____}$$

71. In the morning, the passenger train made the trip in 4 hours. In the afternoon the freight train made the same trip in 7 hours. Find the rate of the freight train if the rate of the passenger train was 50 mph faster than the freight train. ----- 71=_____ mph

72. Knots means nautical miles per hour. A nautical mile is the length of one minute of arc at the equator. Using the radius of the earth as 3,960 miles, find the length of one nautical mile in feet. (60 minutes = 1 degree) ----- 72=_____ feet

73. REGULAR PENTAGON

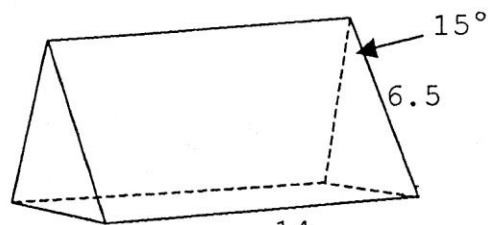
Side = 18



Area = ?

73=_____

74. RIGHT TRIANGULAR PRISM



Volume = ?

74=_____

$$75. \frac{(3.27 \times 10^4)^3 (2.48 \times 10^3)^6}{(4.65 \times 10^4)^4 (2.85 \times 10^4)^4} \text{_____} 75= \text{_____}$$

$$76. \ln(e^{44.6}) \left[\frac{(218)}{(218)} \right] \log(10^{0.887}) \left[\sqrt{(40.6)^2} \right] \left[\sqrt[3]{29.1} \right] \text{_____} 76= \text{_____}$$

$$77. \sqrt[4]{(5.32 \times 10^2)^4} [4.73 \times 10^{23}]^p + (3.71 \times 10^5) - 371,000 \text{_____} 77= \text{_____}$$

$$78. \frac{1}{(0.11)} - \frac{1}{(0.11)^2} + \frac{1}{(0.11)^3} - \frac{1}{(0.11)^4} + \frac{1}{(0.11)^5} \text{_____} 78= \text{_____}$$

$$79. [10^{\log(4.13)}] [e^{\log(4.13)}] [4.13 \times 10^{-4}] \text{_____} 79= \text{_____}$$

$$80. (10^{0.0114}) (10^{0.0112}) (10^{0.0518}) (10^{0.352}) \text{_____} 80= \text{_____}$$

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$$1 = 14,600 \\ 1.46 \times 10^4$$

$$14 = 6,720 \\ 6.72 \times 10^3$$

$$27 = 0.00880 \\ 8.80 \times 10^{-3}$$

$$39 = 1,470 \\ 1.47 \times 10^3$$

$$2 = 1,910 \\ 1.91 \times 10^3$$

$$15 = 0.133 \\ 1.33 \times 10^{-1}$$

$$28 = 1.30 \\ 1.30 \times 10^0$$

$$40 = -93.3 \\ -9.33 \times 10^1$$

$$3 = 71,700 \\ 7.17 \times 10^4$$

$$16 = 32.8 \\ 3.28 \times 10^1$$

$$29 = 1,090 \\ 1.09 \times 10^3$$

$$41 = 106 \\ 1.06 \times 10^2$$

$$4 = 616 \\ 6.16 \times 10^2$$

$$17 = 575 \\ 5.75 \times 10^2$$

$$30 = 0.00909 \\ 9.09 \times 10^{-3}$$

$$42 = 0.398 \\ 3.98 \times 10^{-1}$$

$$5 = 4,560 \\ 4.56 \times 10^3$$

$$18 = -19.8 \\ -1.98 \times 10^1$$

$$31 = 0.00546 \\ 5.46 \times 10^{-3}$$

$$43 = 6.11 \\ 6.11 \times 10^0$$

$$6 = 3.76 \times 10^6$$

$$19 = 1.33 \\ 1.33 \times 10^0$$

$$32 = 1.33 \times 10^{10}$$

$$44 = 579 \\ 5.79 \times 10^2$$

$$7 = 26.1 \\ 2.61 \times 10^1$$

$$20 = 0.416 \\ 4.16 \times 10^{-1}$$

$$33 = 21.9 \\ 2.19 \times 10^1$$

$$45 = 6.64 \\ 6.64 \times 10^0$$

$$8 = 2,670 \\ 2.67 \times 10^3$$

$$21 = -19.8 \\ -1.98 \times 10^1$$

$$34 = -0.00259 \\ -2.59 \times 10^{-3}$$

$$46 = 21,100 \\ 2.11 \times 10^4$$

$$9 = 523 \\ 5.23 \times 10^2$$

$$22 = 1,040 \\ 1.04 \times 10^3$$

$$35 = 8.00 \\ 8.00 \times 10^0$$

$$47 = 38.7 \\ 3.87 \times 10^1$$

$$10 = 2.20 \times 10^6$$

$$23 = -82,300 \\ -8.23 \times 10^4$$

$$36 = 36.4 \\ 3.64 \times 10^1$$

$$48 = 11.4 \\ 1.14 \times 10^1$$

$$11 = 66.4 \\ 6.64 \times 10^1$$

$$24 = 0.314 \\ 3.14 \times 10^{-1}$$

$$37 = 42.7 \\ 4.27 \times 10^1$$

$$49 = 46.8 \\ 4.68 \times 10^1$$

$$12 = 2,230 \\ 2.23 \times 10^3$$

$$25 = 1,260 \\ 1.26 \times 10^3$$

$$38 = 432 \\ 4.32 \times 10^2$$

$$50 = 39.1 \\ 3.91 \times 10^1$$

$$13 = 37.7 \\ 3.77 \times 10^1$$

$$26 = 145 \\ 1.45 \times 10^2$$

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$$51 = \begin{array}{l} 0.0110 \\ 1.10 \times 10^{-2} \end{array}$$

$$61 = \begin{array}{l} 1,360 \\ 1.36 \times 10^3 \end{array}$$

$$72 = \begin{array}{l} 6,080 \\ 6.08 \times 10^3 \end{array}$$

$$52 = \begin{array}{l} -10.1 \\ -1.10 \times 10^1 \end{array}$$

$$62 = \begin{array}{l} 736 \\ 7.36 \times 10^2 \end{array}$$

$$73 = \begin{array}{l} 557 \\ 5.57 \times 10^2 \end{array}$$

$$53 = 6.51 \times 10^{12}$$

$$63 = \begin{array}{l} 880 \\ 8.80 \times 10^2 \end{array}$$

$$74 = \begin{array}{l} 213 \\ 2.13 \times 10^2 \end{array}$$

$$54 = \begin{array}{l} 0.0371 \\ 3.71 \times 10^{-2} \end{array}$$

$$64 = \begin{array}{l} 824 \\ 8.24 \times 10^2 \end{array}$$

$$75 = \begin{array}{l} 0.00264 \\ 2.64 \times 10^{-3} \end{array}$$

$$55 = \begin{array}{l} 44.7 \\ 4.47 \times 10^1 \end{array}$$

$$65 = \begin{array}{l} 0.105 \\ 1.05 \times 10^{-1} \end{array}$$

$$76 = \begin{array}{l} 46,700 \\ 4.67 \times 10^4 \end{array}$$

$$56 = 2.98 \times 10^8$$

$$66 = \begin{array}{l} 112 \\ 1.12 \times 10^2 \end{array}$$

$$77 = \begin{array}{l} 532 \\ 5.32 \times 10^2 \end{array}$$

$$57 = \begin{array}{l} 170 \\ 1.70 \times 10^2 \end{array}$$

$$67 = \begin{array}{l} 99.0 \\ 9.90 \times 10^1 \end{array}$$

$$78 = \begin{array}{l} 55,900 \\ 5.59 \times 10^4 \end{array}$$

$$58 = \begin{array}{l} -0.715 \\ -7.15 \times 10^{-1} \end{array}$$

$$68 = \begin{array}{l} 9,590 \\ 9.59 \times 10^3 \end{array}$$

$$79 = \begin{array}{l} 0.00316 \\ 3.16 \times 10^{-3} \end{array}$$

$$59 = \begin{array}{l} 283 \\ 2.83 \times 10^2 \end{array}$$

$$69 = \begin{array}{l} 0.391 \\ 3.91 \times 10^{-1} \end{array}$$

$$80 = \begin{array}{l} 2.67 \\ 2.67 \times 10^0 \end{array}$$

$$60 = \begin{array}{l} .600 \\ .600 \times 10^{-1} \end{array}$$

$$70 = \begin{array}{l} 0.167 \\ 1.67 \times 10^{-1} \end{array}$$

$$71 = \begin{array}{l} 66.7 \\ 6.67 \times 10^1 \end{array}$$