



**2016-2017 TMSCA Middle School Calculator Test 12**

1.  $1860 + 6440$  ----- 1= \_\_\_\_\_

2.  $42 - 20 - 13$  ----- 2= \_\_\_\_\_

3.  $114 + 96.1 + 74.3$  ----- 3= \_\_\_\_\_

4.  $17 + 37 - 28 - 28$  ----- 4= \_\_\_\_\_

5.  $82 - 444 - 392 + 348$  ----- 5= \_\_\_\_\_

6.  $21.7 + 107 - 38.9 - 36.1 - 139$  ----- 6= \_\_\_\_\_

7.  $0.337 - 1.65 + 1.65 - 0.187 - 1.42$  ----- 7= \_\_\_\_\_

8.  $2.61 + 6.4 + 0.917 + 3.24 + 8.16$  ----- 8= \_\_\_\_\_

9.  $504 \times 112 \times 39$  ----- 9= \_\_\_\_\_

10.  $969 \times 1980 \times 4090 \times 172$  ----- 10= \_\_\_\_\_

11. The area of a square is 245 square inches. Calculate the perimeter of the square in inches. ----- 11= \_\_\_\_\_ in.

12. Calculate the median of the following list of numbers. Pi, 25,  $2^2$ , 6, the square root of 12, 1.5,  $3^0$ , and the square root of 10. ----- 12= \_\_\_\_\_

13. The sum of three consecutive integers is 594. Calculate the largest integer. ----- 13= \_\_\_\_\_ INT.

14.  $(256/892)[941 - 666]$  -----14= \_\_\_\_\_

15.  $(190)[456 \times 86 \times 208]$  -----15= \_\_\_\_\_

16.  $\left[\frac{225}{356}\right][(250/102) - \pi]$  -----16= \_\_\_\_\_

17.  $\left[\frac{51}{186}\right] [(248/43) + 4.83]$  -----17= \_\_\_\_\_

18.  $\left[\frac{(736/182) - (217/1070)}{(6.62 \times 10^{-4}) / (6.15 \times 10^{-4})}\right]$  -----18= \_\_\_\_\_

19.  $\frac{(449/448) + (50/386)}{(8.94 \times 10^{-4} - 6.23 \times 10^{-4})}$  -----19= \_\_\_\_\_

20.  $\frac{231}{(149 - 213)} - \frac{(240 - 143)}{33}$  -----20= \_\_\_\_\_

21.  $\frac{126 + 20.6 + 38.4}{(182)(497)(0.815)}$  -----21= \_\_\_\_\_

22.  $\frac{(3960 \times 7170)/8310}{(5930 \times 0.181) + 250}$  -----22= \_\_\_\_\_

23.  $\left[\frac{339 + 528}{1460 - 1740}\right] \left[\frac{1100}{1060}\right]$  -----23= \_\_\_\_\_

24. Arianna was craving something from a store that is 1.25 miles from her house. Calculate the time a round trip from her house to the store would take if she ran there at 12 mph and walked back at 4 mph. -----24= \_\_\_\_\_ hrs.

25. Sandy and Bill want to try a few different types of steak. They buy an 8 oz. Sirloin at \$8.99 per pound, a 12 oz. Porterhouse at \$11.99 per pound, and a 10 oz. Filet Mignon at \$19.99 per pound. Calculate the cost of the meat. -----25=\$ \_\_\_\_\_

26. A circle has an area of 335.8 sq. in. A square is inscribed in the circle. Calculate the perimeter of the square. -----26= \_\_\_\_\_ in.

27.  $(135)[(3.6/26.4)(0.0177/0.0173)]$  -----27= \_\_\_\_\_

28.  $\frac{(0.0702 - 0.0367)(0.00464 + 0.0193)}{(5.13 \times 10^{12})}$  -----28= \_\_\_\_\_

29.  $[2020 - (3920 + 2050)] + [(\pi)(4830 - 1690)]$  -----29= \_\_\_\_\_

30.  $\frac{1}{240} + \frac{1}{(\pi)(101 - 20.7)}$  -----30= \_\_\_\_\_

31.  $\frac{(19.1 + 21.1)}{(2.54 \times 10^{11})}$  -----31= \_\_\_\_\_

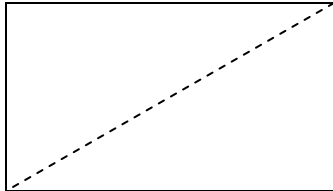
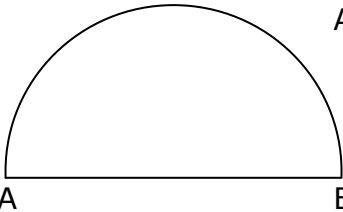
32.  $\frac{1}{2.3} + \frac{1}{(12.3 - 11.4)}$  -----32= \_\_\_\_\_

33.  $\frac{1}{140} - \frac{1}{197} + \frac{1}{39.1}$  -----33= \_\_\_\_\_

34.  $\left[\frac{1/257}{1/210}\right] + [0.295]$  -----34= \_\_\_\_\_

35. A rectangular plot of land is 300 feet longer than it is wide. If the perimeter is 1726.9 feet, calculate the area of the plot. -----35= \_\_\_\_\_ sq. ft.

36. To complete a task, employee A took 15 minutes, employee B took 22 minutes, and employee C took 10 minutes. Calculate how long to complete the task, in hours, if they work together. -----36= \_\_\_\_\_ hrs.

RECTANGLE	SEMI- CIRCLE
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: right;"> <p>Perimeter = 346.6</p> <p>Diagonal = ?</p> </div> </div> <p style="margin-top: 20px;">37= _____</p>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: right;"> <p>Arc AB = 12721</p> <p>Perimeter = ?</p> </div> </div> <p style="margin-top: 20px;">38= _____</p>

39.  $\left[\frac{1430}{317}\right](816 + 921)^2$  -----39= \_\_\_\_\_

40.  $(387 + 202)^2(0.0598 + 0.249)^2$  -----40= \_\_\_\_\_

41.  $\frac{(18200 + 8780)^3}{(0.438 - 0.229)^2}$  -----41= \_\_\_\_\_

42.  $(825)\sqrt{607 + 124 + 507}$  -----42= \_\_\_\_\_

43.  $\sqrt{(63.3/69.9) + 0.596 - 0.51}$  -----43= \_\_\_\_\_

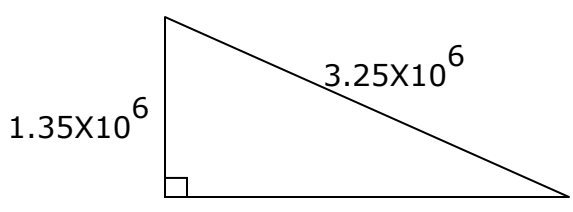
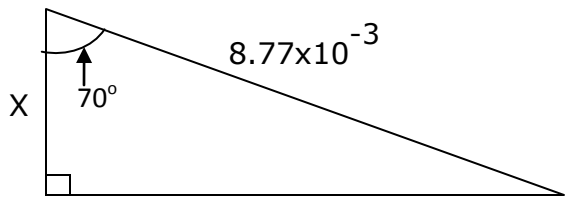
44.  $\sqrt{5430 - 4770 + 5060} - \sqrt{2000}$  -----44= \_\_\_\_\_

45.  $[\sqrt{(10.3/2.05)(0.897)}]^3$  -----45= \_\_\_\_\_

46.  $\frac{1}{\sqrt{660 + 1830 + 1030}} + \left(\frac{1}{\sqrt{2.49}}\right)^4$  -----46= \_\_\_\_\_

47. The sides of an equilateral triangle are 27072 inches. Calculate the height of the triangle in inches. -----47= \_\_\_\_\_ in.

48. If  $2x + 8y = 31$  and  $4x - 12y = -17$ , calculate the value of x. -----48= \_\_\_\_\_

<p style="text-align: center;"><b>RIGHT TRIANGLE</b></p>  <p style="text-align: center;">Perimeter = ?</p> <p>49= _____</p>	<p style="text-align: center;"><b>RIGHT TRIANGLE</b></p>  <p style="text-align: center;">X = ?</p> <p>50= _____</p>
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51.  $\frac{(279 + 54.5 - 175)^4}{\sqrt{1.72 + 1.61 + 0.65}}$  -----51= \_\_\_\_\_

52.  $\left[ \frac{22 - 21.2 + \sqrt{110/206}}{-19.7 + 27.6} \right]^4$  -----52= \_\_\_\_\_

53.  $\sqrt{\frac{1.76 \times 10^6}{(15700)(156)} + \frac{(11900 - 14300)}{(328 + 1270)}}$  -----53= \_\_\_\_\_

54.  $(16.5)(7.00 \times 10^9)^{1/3} - [(12800)(34600)]^{1/2}$  -----54= \_\_\_\_\_

55.  $29900 + \sqrt{(11400)(25800)} - (27300 + 15700)$  -----55= \_\_\_\_\_

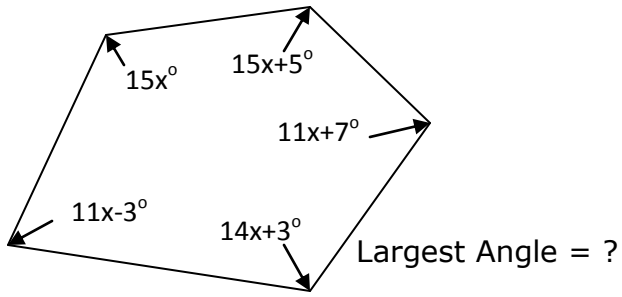
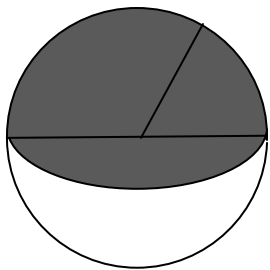
56.  $\sqrt{\frac{1/(8.99 - 4.59)}{(161)(11.8 + 10.8)^4}}$  -----56= \_\_\_\_\_

57.  $(\text{deg}) \cos(396^\circ) + (82.7/155)$  -----57= \_\_\_\_\_

58.  $\sqrt{\frac{(657)(532)}{(49.7) + (78.2)}} - 69.6$  -----58= \_\_\_\_\_

59. A test has 10 multi-choice questions with 5 choices each and 10 true-false questions. Calculate how many possible outcomes there are for the test. -----59= \_\_\_\_\_

60. A circular pool is surrounded by a circular planter that is 8 feet wide. The total area of the pool and planter is 2500.8 square feet. Calculate the area of the pool. -----60= \_\_\_\_\_ ft<sup>2</sup>

<p style="text-align: center;"><b>PENTAGON</b></p>  <p style="text-align: right;">Largest Angle = ?</p> <p>61 = _____</p>	<p style="text-align: center;"><b>THREE-QUARTER SPHERE</b></p>  <p style="text-align: right;">Radius = 2.83</p> <p style="text-align: right;">Surface Area = ?</p> <p>62 = _____</p>
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63.  $\frac{12! + 11!}{26!}$  -----63= \_\_\_\_\_

64. (deg)  $(11.7 - 13.1)\cos(4.49^\circ)$  -----64= \_\_\_\_\_

65. (deg)  $\frac{\tan(124^\circ)}{739}$  -----65= \_\_\_\_\_

66. (deg)  $\tan(28.4^\circ - 72.5^\circ) + 0.86$  -----66= \_\_\_\_\_

67. (deg)  $[58.9]\sin(332^\circ - 575^\circ)$  -----67= \_\_\_\_\_

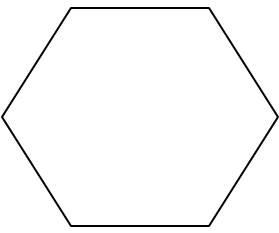
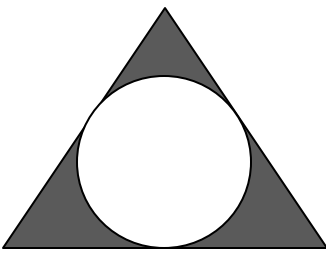
68. (rad)  $\sin[(3.12 - 2.38)(5.38)]$  -----68= \_\_\_\_\_

69. (deg)  $\frac{\sin(276^\circ) - \tan(276^\circ)}{\sin(276^\circ)}$  -----69= \_\_\_\_\_

70.  $\left[ (2920) \left( \frac{1280}{(2930)(\pi)} \right) \right]^{7/2}$  -----70= \_\_\_\_\_

71. The time to drive a given distance is inversely proportional to the speed. It takes 4 hours to drive a given distance at 72 mph, calculate the time it will take at 60 mph. -----71= \_\_\_\_\_ hrs.

72. A jar contains 12 blue, 6 red, 8 yellow, and 15 white marbles. Calculate the probability of drawing out a blue then a white if the first drawn is not replaced. -----72= \_\_\_\_\_

<p style="text-align: center;"><b>REGULAR HEXAGON</b></p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="text-align: left;"> <p>Area = 8772</p> <p>Perimeter = ?</p> </div> </div> <p>73= _____</p>	<p style="text-align: center;"><b>EQUILATERAL TRIANGLE AND INSCRIBED CIRCLE</b></p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="text-align: left;"> <p>Radius = 5</p> <p>Shaded Area = ?</p> </div> </div> <p>74= _____</p>
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75.  $\ln\left[\frac{95.6 + 616 + 869}{606 + 514 - 256}\right]$  -----75= \_\_\_\_\_

76.  $\frac{\log(1.48 \times 10^8 + 4.42 \times 10^8)}{3.79}$  -----76= \_\_\_\_\_

77.  $\frac{351 - 896}{\log(15200 + 17000)}$  -----77= \_\_\_\_\_

78.  $(\pi)^4 (0.143)^2 (4.3 - 3.59)^3$  -----78= \_\_\_\_\_

79.  $2 + 4 + 6 + \dots + 690$  -----79= \_\_\_\_\_

80.  $(0.991) - \frac{(0.991)^2}{2} + \frac{(0.991)^3}{3} - \frac{(0.991)^4}{4}$  -----80= \_\_\_\_\_



## 2016-2017 TMSCA Middle School Calculator Test 12 Answer Key

Page 1	Page 2	Page 3	Page 4
1 = 8300 = $8.30 \times 10^3$	14 = 78.9 = $7.89 \times 10^1$	27 = 18.8 = $1.88 \times 10^1$	39 = $1.36 \times 10^7$
2 = 9.00 = $9.00 \times 10^0$	15 = $1.55 \times 10^9$	28 = $1.56 \times 10^{-16}$	40 = 33100 = $3.31 \times 10^4$
3 = 284 = $2.84 \times 10^2$	16 = -0.436 = $-4.36 \times 10^{-1}$	29 = 5910 = $5.91 \times 10^3$	41 = $4.50 \times 10^{14}$
4 = -2.00 = $-2.00 \times 10^0$	17 = 2.91 = $2.91 \times 10^0$	30 = 0.00813 = $8.13 \times 10^{-3}$	42 = 29000 = $2.90 \times 10^4$
5 = -406 = $-4.06 \times 10^2$	18 = 3.57 = $3.57 \times 10^0$	31 = $1.58 \times 10^{-10}$	43 = 0.996 = $9.96 \times 10^{-1}$
6 = -85.3 = $-8.53 \times 10^1$	19 = 4180 = $4.18 \times 10^3$	32 = 1.55 = $1.55 \times 10^0$	44 = 30.9 = $3.09 \times 10^1$
7 = -1.27 = $-1.27 \times 10^0$	20 = -6.55 = $-6.55 \times 10^0$	33 = 0.0276 = $2.76 \times 10^{-2}$	45 = 9.57 = $9.57 \times 10^0$
8 = 21.3 = $2.13 \times 10^1$	21 = 0.00251 = $2.51 \times 10^{-3}$	34 = 1.11 = $1.11 \times 10^0$	46 = 0.178 = $1.78 \times 10^{-1}$
9 = $2.20 \times 10^6$	22 = 2.58 = $2.58 \times 10^0$	35 = 164000 = $1.64 \times 10^5$	47 = 23400 = $2.34 \times 10^4$
10 = $1.35 \times 10^{12}$	23 = -3.21 = $-3.21 \times 10^0$	36 = 0.0786 = $7.86 \times 10^{-2}$	48 = 4.21 = $4.21 \times 10^0$
11 = 62.6 = $6.26 \times 10^1$	24 = 0.417 = $4.17 \times 10^{-1}$	37 = 127 = $1.27 \times 10^2$	49 = 7560000 = $7.56 \times 10^6$
12 = 3.31 = $3.31 \times 10^1$	25 = \$25.98	38 = 20800 = $2.08 \times 10^4$	50 = 0.00300 = $3.00 \times 10^{-3}$
13 = 199 INT.	26 = 58.5 = $5.85 \times 10^1$		

## 2016-2017 TMSCA Middle School Calculator Test 12 Answer Key

### Page 5

$$51 = 3.16 \times 10^8$$

$$52 = 0.00141 \\ = 1.41 \times 10^{-3}$$

$$53 = -0.654 \\ = -6.54 \times 10^{-1}$$

$$54 = 10500 \\ = 1.05 \times 10^4$$

$$55 = 4050 \\ = 4.05 \times 10^3$$

$$56 = 7.36 \times 10^{-5}$$

$$57 = 1.34 \\ = 1.34 \times 10^0$$

$$58 = -17.3 \\ = -1.73 \times 10^1$$

$$59 = 1.00 \times 10^{10}$$

$$60 = 1280 \\ = 1.28 \times 10^3$$

### Page 6

$$61 = 125 \\ = 1.25 \times 10^2$$

$$62 = 101 \\ = 1.01 \times 10^2$$

$$63 = 1.29 \times 10^{-18}$$

$$64 = -1.40 \\ = -1.40 \times 10^0$$

$$65 = -0.00201 \\ = -2.01 \times 10^{-3}$$

$$66 = -0.109 \\ = -1.09 \times 10^{-1}$$

$$67 = 52.5 \\ = 5.25 \times 10^1$$

$$68 = -0.744 \\ = -7.44 \times 10^{-1}$$

$$69 = -8.57 \\ = -8.57 \times 10^0$$

$$70 = 1.35 \times 10^9$$

$$71 = 4.80 \\ = 4.80 \times 10^0$$

$$72 = 0.110 \\ = 1.10 \times 10^{-1}$$

### Page 7

$$73 = 349 \\ = 3.49 \times 10^2$$

$$74 = 51.4 \\ = 5.14 \times 10^1$$

$$75 = 0.604 \\ = 6.04 \times 10^{-1}$$

$$76 = 2.31 \\ = 2.31 \times 10^0$$

$$77 = -121 \\ = -1.21 \times 10^2$$

$$78 = 0.713 \\ = 7.13 \times 10^{-1}$$

$$79 = 119000 \\ = 1.19 \times 10^5$$

$$80 = 0.583 \\ = 5.83 \times 10^{-1}$$