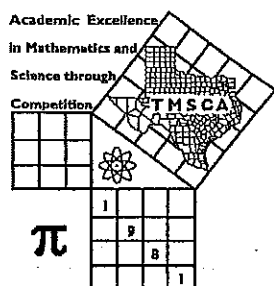


1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
S & G _____	S & G _____	S & G _____	
Grader: _____	Grader: _____	Grader: _____	

Name: _____	School: _____
SS/ID Number: _____	City: _____
Grade: 5 6 7 8	Classification: 1A 2A 3A 4A 5A

Student Signature Required: _____



TMSCA MIDDLE SCHOOL CALCULATOR

TEST # 1

OCTOBER 25, 2008

GENERAL DIRECTIONS

I. About this test:

- A. You will be given 30 minutes to take this test.
- B. There are 80 problems on this test.

II. How to write the answers:

- A. For all problems except stated problem as noted below write three significant digits.
 - 1. Examples (* means correct, but not recommended)
 Correct: 12.3, 123, 123.*, 1.23x10*, 1.23x10^{0*}, 1.23x10¹, 1.23x10⁰¹, .0190, 1.90x10⁻²
 Incorrect: 12.30, 123.0, 1.23(10)², 1.23·10², 1.230x10², 1.23*10², 0.19, 1.9x10⁻², 19.0x10⁻³, 1.90E-02
 - 2. Plus or minus one digit error in the third significant digit is permitted.

- B. For stated problems:

- 1. Except for integer, dollar sign, and significant digit problems, as detailed below, 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. The decimal point and cents are required for exact dollar answers.

III. Some symbols used on the test.

- A. Angle measure: rad means radians; deg means degrees.
- B. Inverse trigonometric functions: arcsin for inverse sine, etc.
- C. Special numbers: π for 3.14159 . . . ; e for 2.71828.
- D. Logarithms: Log means common (base 10); Ln means natural (base e).

IV. Scoring:

- A. All problems answered correctly are worth FIVE points. FOUR points will be deducted for all problems answered incorrectly or skipped before the last problem attempted.

2008-2009 TMSCA Middle School Calculator Test 1

1. $30.1 - \pi$ ----- 1= _____

2. $93 - 129 - 27$ ----- 2= _____

3. $3.8 - 10.8 + 45$ ----- 3= _____

4. $50 + 84 - 241 - 122$ ----- 4= _____

5. $431 + 333 + 152 + 363$ ----- 5= _____

6. $11.0 + 41.9 - 12.9 - 64.3 + 3.52$ ----- 6= _____

7. $(68.4 - 133) + (66.6 - 29.5 - 63.6)$ ----- 7= _____

8. $342 + 223 + 319 + 198 + 95.5$ ----- 8= _____

9. $\pi \times 48.4 \times 2.51$ ----- 9= _____

10. $0.118 \times 104 \times 5.28 \times \pi$ ----- 10= _____

11. What is seventy-three percent of four-fifths of 7,223,892? ----- 11= _____

12. Taylor scored 364, 391, 282 and had two scores of 332. What was Taylor's mean score on the five Calculator tests? ----- 12= _____

13. Simon travels six and thirty-eight hundredths miles each way to work and back. How many yards does he travel in one work day? ----- 13= _____ yds.

14. $123 [131 \times 78/127]$ ----- 14= _____

15. $(-75/101)[61 - 59]$ ----- 15= _____

16. $(191 + 71)[70 - 56 - 95]$ ----- 16= _____

17. $\frac{324}{274} [(660/510) + 0.421]$ ----- 17= _____

18. $\frac{(108/38)/0.148}{(27.7 \times 13.8)0.103}$ ----- 18= _____

19. $\frac{(54/95) + (100/36)}{(1.72 - 4.69)}$ ----- 19= _____

20. $\frac{8.16(3.91 \times 10^{-4})}{1.58} (418 - 658)$ ----- 20= _____

21. $348[24/78 \times 58/84] - 37.6$ ----- 21= _____

22. $\frac{(3120 \times 1420)/2860}{(3360 \times 3.04 \times 10^{-4}) + \pi}$ ----- 22= _____

23. $\frac{[-(173 + 1000)(257 - 838)]}{(33.2/24500)}$ ----- 23= _____

24. The sum of five consecutive integers is 670.
What is the largest of the five integers? ----- 24= _____ int.

25. The scale on a map reads that one-half inch
represents fifteen miles. If the distance from
Cramer to Albright is seven and six-tenths inches,
How many miles is it from Cramer to Albright? --- 25= _____ mi.

26. Carol went to eat with her parents. Her parents
Had steak dinners at \$17.95 each and she had crab
legs that cost \$22.50. If the sales tax is 8.75%,
what was the cost of the meal including tax? ---- 26= \$ _____

27. $(26) [(0.237/0.141)(0.164/0.171)]$ ----- 27= _____

28. $\frac{(0.775 - 0.321)(0.369 + 0.331)}{1.56 \times 10^{11}}$ ----- 28= _____

29. $\frac{(1.86 \times 10^7) + (1.44 \times 10^7)}{(-4.37 \times 10^{-4})(0.00104) - 2.70 \times 10^{-7}}$ ----- 29= _____

30. $(12.1) [(2.04 \times 10^8) - (1.89 \times 10^8)]$ ----- 30= _____

31. $\frac{(0.0329 + 0.0119)}{5.15 \times 10^{11}}$ ----- 31= _____

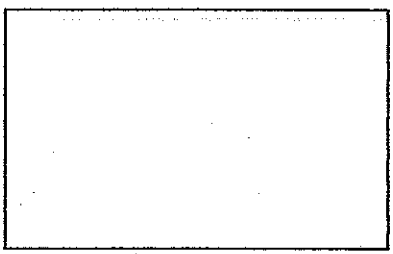
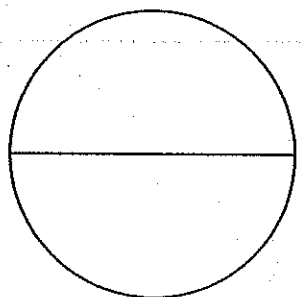
32. $\frac{1}{-0.0139} + \frac{1}{(0.0267 - 0.0421)}$ ----- 32= _____

33. $\frac{1}{702} - \frac{1}{167} + \frac{1}{153}$ ----- 33= _____

34. $\frac{1}{343} - \frac{1}{(101 + 486)}$ ----- 34= _____

35. What is the multiplicative inverse of five and two hundred seventy-three thousandths? ----- 35= _____

36. A certain triangle is five and one-half times the area of a certain square. If the perimeter of the square is eight and two-thirds inches, what is the area of the triangle? ----- 36= _____ in²

RECTANGLE	CIRCLE
	
PERIMETER = ?	CIRCUMFERENCE = 18.62 DIAMETER = ?
37= _____	38= _____

39. $\left[\frac{122}{332}\right](0.423 + 2.36)^4$ ----- 39= _____

40. $\left[\frac{57400 + (1/1.78 \times 10^{-5})}{(22700/44700) - 0.461}\right]^2$ ----- 40= _____

41. $\frac{(37000 + 26900)^3}{(0.0692 - 0.0948)^2}$ ----- 41= _____

42. $\sqrt{23100 - 9700 + 14100} - \sqrt{23800}$ ----- 42= _____

43. $\sqrt{(26.3/19.3) + 1.09 - 0.56}$ ----- 43= _____

44. $\sqrt{28.3} + \sqrt{32.7 + 39.2} - (\pi)\sqrt{37.9}$ ----- 44= _____

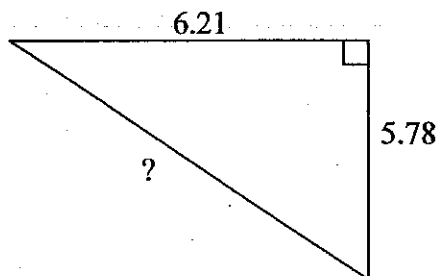
45. $\frac{1}{\sqrt{1100 + 3890 + 7480}} + \left(\frac{1}{\sqrt{13.8}}\right)^3$ ----- 45= _____

46. $\frac{(26.8 + 22.2)^{1/3}}{(369 - 248)^{1/2}}$ ----- 46= _____

47. The price of gas in July of 1988 was \$1.449 per gallon. The price of a gallon of gas in July of 2008 was \$3.999. What was the percent increase? 47= _____ %

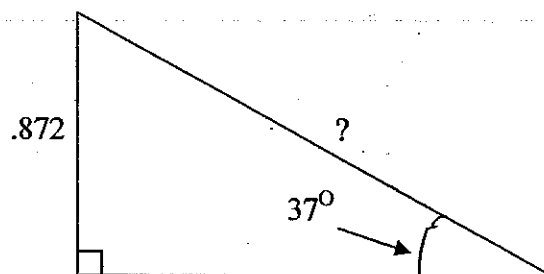
48. Calculate 7234^{1678} ----- 48= _____

RIGHT TRIANGLE



49= _____

RIGHT TRIANGLE



50= _____

51. $\left[\frac{4220 + 9610 + \sqrt{1.59 \times 10^8 + 6.41 \times 10^7}}{497/360} \right]^3$ ----- 51= _____

52. $\left[\frac{5170 - 4640 + \sqrt{4.55 \times 10^6 / 25.4}}{-593 + 1030} \right]^{-4}$ ----- 52= _____

53. $\sqrt{\frac{946}{(57000)(201)}} + \frac{(19.5 - 3.09)}{(757 + 997)}$ ----- 53= _____

54. $573 + \sqrt{(714)(1130)} - (500 + 1100)$ ----- 54= _____

55. $\sqrt{\frac{1/(19.8 - 15.1)}{(28.7)(196 + 219)^2}}$ ----- 55= _____

56. $\sqrt{\frac{(4.40 \times 10^5)(12200)}{(1.23 \times 10^5)(86800)}} - 0.606 + 0.33$ ----- 56= _____

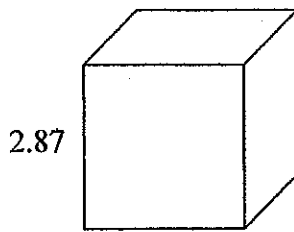
57. $\sqrt{\frac{1/(37.6 - 17.7)}{(14.1)(1560 + 2100)^{-3}}}$ ----- 57= _____

58. $(\deg) \tan(233^\circ) + (0.674/0.145)$ ----- 58= _____

59. The product of a number and seven increased by seventy-one is twenty-two and three-eighths.
What is the number? ----- 59= _____

60. What is the mid-point of the x-coordinate of
(7.23, - 8.27) and (- 5.19, 3.28)? ----- 60= _____

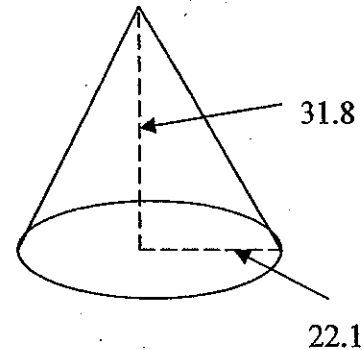
CUBE



SURFACE AREA = ?

61= _____

CONE



VOLUME = ?

62= _____

63. $\frac{17!}{12!}$ ----- 63= _____

64. (deg) $(335 + 382)\sin(58.8^\circ)$ ----- 64= _____

65. $(248 - \pi)e^{0.297}$ ----- 65= _____

66. (deg) $\sin(12.7^\circ - 3.53^\circ) + 0.0191$ ----- 66= _____

67. (deg) $(5990 - 1690)\sin(1.87^\circ) + 139$ ----- 67= _____

68. (deg) $\frac{\sin(154^\circ)}{\tan(154^\circ)} [398]$ ----- 68= _____

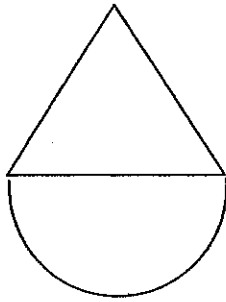
69. (deg) $\frac{\sin(9.89^\circ)}{8.15 + 3.16}$ ----- 69= _____

70. $\left[(34.1)\frac{2.74}{975(\pi)}\right]^{1/2}$ ----- 70= _____

71. Find the surface area of a sphere with a radius of 1.11 feet. ----- 71= _____ ft.²

72. A bag contains 12 quarters, 8 dimes, 6 nickels, and 22 pennies. What is the probability of drawing two quarters in a row if the first quarter drawn was replaced? ----- 72= _____

EQUILATERAL TRIANGLE AND SEMICIRCLE

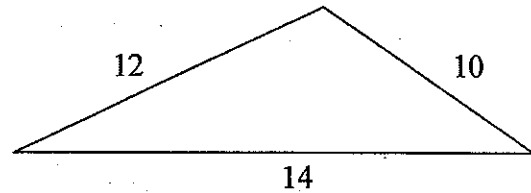


RADIUS = 7.7

PERIMETER = ?

73= _____

SCALED TRIANGLE



AREA = ?

74= _____

$$75. \frac{0.0295 + \sqrt{(0.027)(0.0112)} + (0.155)(0.74)}{\sqrt{\sqrt{0.393} + 0.437}} \quad \text{---} \quad 75 = \underline{\hspace{2cm}}$$

$$76. \ln \left[\frac{506 + 385 + 862}{225 + 154 - 36.1} \right] \quad \text{---} \quad 76 = \underline{\hspace{2cm}}$$

$$77. (28300)10^{(0.139)(3.36)} \quad \text{---} \quad 77 = \underline{\hspace{2cm}}$$

$$78. \frac{33200 - 26200}{\log(10600 + 9790)} \quad \text{---} \quad 78 = \underline{\hspace{2cm}}$$

$$79. \frac{\log[26.4 + (0.547)(93.3)]}{1.7 + \log[229 + 27.3]} \quad \text{---} \quad 79 = \underline{\hspace{2cm}}$$

$$80. 1 + 2 + 3 + \dots + 137 \quad \text{---} \quad 80 = \underline{\hspace{2cm}}$$

2008-2009 TMSCA Middle School Calculator Test 1 Key

Page 1

$$1 = 27.0$$

$$= 2.70 \times 10^1$$

$$2 = -63.0$$

$$= -6.30 \times 10^1$$

$$3 = 38.0$$

$$= 3.80 \times 10^1$$

$$4 = -229$$

$$= -2.29 \times 10^2$$

$$5 = 1280$$

$$= 1.28 \times 10^3$$

$$6 = -20.5$$

$$= -2.05 \times 10^1$$

$$7 = -91.1$$

$$= -9.11 \times 10^1$$

$$8 = 1180$$

$$= 1.18 \times 10^3$$

$$9 = 382$$

$$= 3.82 \times 10^2$$

$$10 = 204$$

$$= 2.04 \times 10^2$$

$$11 = 4.22 \times 10^6$$

$$12 = 340$$

$$3.40 \times 10^2$$

$$13 = 22500$$

$$2.25 \times 10^4$$

Page 2

$$14 = 9900$$

$$= 9.90 \times 10^3$$

$$15 = -1.49$$

$$= -1.49 \times 10^0$$

$$16 = -21200$$

$$= -2.12 \times 10^4$$

$$17 = 2.03$$

$$= 2.03 \times 10^0$$

$$18 = 0.488$$

$$= 4.88 \times 10^{-1}$$

$$19 = -1.13$$

$$= -1.13 \times 10^0$$

$$20 = -0.485$$

$$= -4.85 \times 10^{-1}$$

$$21 = 36.3$$

$$= 3.63 \times 10^1$$

$$22 = 372$$

$$= 3.72 \times 10^2$$

$$23 = 5.03 \times 10^8$$

$$24 = 136 \text{ int.}$$

$$25 = 228$$

$$2.28 \times 10^2$$

$$26 = \$63.51$$

Page 3

$$27 = 41.9$$

$$= 4.19 \times 10^1$$

$$28 =$$

$$2.04 \times 10^{-12}$$

$$29 =$$

$$-4.55 \times 10^{13}$$

$$30 = 1.82 \times 10^8$$

$$31 =$$

$$8.70 \times 10^{-14}$$

$$32 = -137$$

$$= -1.37 \times 10^2$$

$$33 = 0.00197$$

$$= 1.97 \times 10^{-3}$$

$$34 = 0.00121$$

$$= 1.21 \times 10^{-3}$$

$$35 = .190$$

$$1.90 \times 10^{-1}$$

$$36 = 25.8$$

$$2.58 \times 10^1$$

$$37 = 78.4$$

$$7.84 \times 10^1$$

$$38 = 5.93$$

$$5.93 \times 10^0$$

Page 4

$$39 = 22.0$$

$$= 2.20 \times 10^1$$

$$40 = 5.88 \times 10^{12}$$

$$41 = 3.98 \times 10^{17}$$

$$42 = 11.6$$

$$= 1.16 \times 10^1$$

$$43 = 1.38$$

$$= 1.38 \times 10^0$$

$$44 = -5.54$$

$$= -5.54 \times 10^0$$

$$45 = 0.0285$$

$$= 2.85 \times 10^{-2}$$

$$46 = 0.333$$

$$= 3.33 \times 10^{-1}$$

$$47 = 176$$

$$1.76 \times 10^2$$

$$48 = 1.09 \times 10^{6476}$$

$$49 = 8.48$$

$$8.48 \times 10^0$$

$$50 = 1.45$$

$$1.45 \times 10^0$$

2008-2009 TMSCA Middle School Calculator Test 1 Key

Page 5

Page 6

Page 7

$$51 = 9.05 \times 10^{12}$$

$$52 = 0.0442$$

$$= 4.42 \times 10^{-2}$$

$$53 = 0.0184$$

$$= 1.84 \times 10^{-2}$$

$$54 = -129$$

$$= -1.29 \times 10^2$$

$$55 = 0.000207$$

$$= 2.07 \times 10^{-4}$$

$$56 = 0.433$$

$$= 4.33 \times 10^{-1}$$

$$57 = 13200$$

$$= 1.32 \times 10^4$$

$$58 = 5.98$$

$$= 5.98 \times 10^0$$

$$59 = -6.95$$

$$= -6.95 \times 10^0$$

$$60 = 1.02$$

$$= 1.02 \times 10^0$$

$$61 = 49.4$$

$$= 4.94 \times 10^1$$

$$62 = 16300$$

$$= 1.63 \times 10^4$$

$$63 = 743000$$

$$= 7.43 \times 10^5$$

$$64 = 613$$

$$= 6.13 \times 10^2$$

$$65 = 330$$

$$= 3.30 \times 10^2$$

$$66 = 0.178$$

$$= 1.78 \times 10^{-1}$$

$$67 = 279$$

$$= 2.79 \times 10^2$$

$$68 = -358$$

$$= -3.58 \times 10^2$$

$$69 = 0.0152$$

$$= 1.52 \times 10^{-2}$$

$$70 = 0.175$$

$$= 1.75 \times 10^{-1}$$

$$71 = 15.5$$

$$= 1.55 \times 10^1$$

$$72 = .0625$$

$$= 6.25 \times 10^{-2}$$

$$73 = 55.0$$

$$= 5.50 \times 10^1$$

$$74 = 58.8$$

$$= 5.88 \times 10^1$$

$$75 = 0.169$$

$$= 1.69 \times 10^{-1}$$

$$76 = 1.63$$

$$= 1.63 \times 10^0$$

$$77 = 83000$$

$$= 8.30 \times 10^4$$

$$78 = 1620$$

$$= 1.62 \times 10^3$$

$$79 = 0.460$$

$$= 4.60 \times 10^{-1}$$

$$80 = 9450$$

$$= 9.45 \times 10^3$$