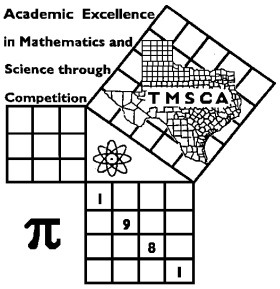
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

PLACE LABEL BELOW

Name:_____ School:_____

SS/ID Number:_____ City:_____

Grade: 4 5 6 7 8 Classification: 1A 2A 3A 4A 5A 6A



TMSCA MIDDLE SCHOOL NUMBER SENSE TEST #12©

FEBRUARY 19, 2022

GENERAL DIRECTIONS

1. Write only the requested information on this coversheet. Do not make any additional marks on this cover sheet.
2. You will be given 10 minutes to take this test.
3. There are 80 problems on the test.
4. Write in ink only! It would be advantageous to use non-black ink.
5. Solve as many problems as you can in the order that they appear.
6. Problems that are skipped are considered wrong.
7. Problems that appear after the last attempted problem do not count either for or against you.
8. ALL PROBLEMS ARE TO BE SOLVED MENTALLY! [No scratch work!]
9. Only the answer may be written in the answer blank.
10. Starred [*] problems require approximate INTEGRAL answers that are within 5% of the exact answers. All other problems require exact answers.
11. 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.

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2021-2022 TMSCA Middle School Number Sense Test 12

(1) $388 - 166 =$ _____

(2) $1765 + 235 =$ _____

(3) $60 \times 25 =$ _____

(4) $4.6 + 3.42 =$ _____ (decimal)

(5) $7236 \div 9 =$ _____

(6) $88\% =$ _____ (fraction)

(7) $29 + 33 + 37 =$ _____

(8) $654 \times 11 =$ _____

(9) $\frac{3}{7} - \frac{3}{14} =$ _____ (fraction)

***(10)** $752 - 230 + 477 =$ _____

(11) $28 \times 88 =$ _____

(12) 17 is what percent of 25? _____%

(13) $\frac{19}{40} =$ _____ (decimal)

(14) $45 \times 75 =$ _____

(15) $\frac{5}{6} \times \frac{3}{10} =$ _____

(16) The largest prime number less than 52 is ___

(17) LXV + XXVI = _____ (Arabic numeral)

(18) $92 \times 96 =$ _____

(19) 68 quarts = _____ gallons

***(20)** $452 \times 59 =$ _____

(21) An angle complementary to 75° measures _____°

(22) The cube root of -1728 is _____

(23) $6\frac{3}{7} \times 6\frac{4}{7} =$ _____ (mixed number)

(24) If 8 ads cost $24.32, then 12 ads cost $_____

(25) $19^2 + 57^2 =$ _____

(26) $8\frac{2}{3} \times 6\frac{1}{4} =$ _____ (mixed number)

(27) $|21 - 6| + 15 + |3 - 18| =$ _____

(28) $\frac{9}{11} + \frac{11}{9} =$ _____ (mixed number)

(29) $105 \times 113 =$ _____

***(30)** $\sqrt{228} \times \sqrt{394} =$ _____

(31) If $f(x) = x^2 - 8x + 16$, then $f(25) =$ _____

(32) If the perimeter of a square is 96 cm, then the area is _____ cm^2

(33) $\frac{2}{7}$ of a gallon = _____ in^3

(34) 55 base 6 = _____ base 10

(35) If $4^{3x} = 64$, then $5x =$ _____

(36) $342 \times 12 =$ _____

(37) $(48 \text{ in}) \times (36 \text{ in}) \times (60 \text{ in}) =$ _____ ft^3

(38) The number of the positive integral divisors of 42 is _____

(39) The slope of the line $5x - 9y = 11$ is _____

***(40)** $\sqrt{196734} =$ _____

(41) 23% of 48 is 69% of _____

(42) $(17x - 5)^2 = ax^2 + bx + c$. $a + b + c =$ _____

(43) The measure of an interior angle of a regular pentagon is_____°

(44) The total surface area of a cube with edge = 11 cm is _____ cm^2

(45) The distance between the points $(2,-3)$ and $(10, 3)$ is _____

(46) The negative reciprocal of 3.8 is _____

(47) 36% of 1.1666… = _____

(48) 42 is what percent of 28 _____%

(49) $357 \times 111 =$ _____

***(50)** $63 \times 70 \times 77 =$ _____

(51) The fourth pentagonal number is _____

(52) 0.426426426… = _____ (fraction)

(53) $\left(3\sqrt{2} \times 5\sqrt{2}\right)^2 =$ _____

(54) My car gets 36 mi/gal and it has 36 gal in the tank. How many miles can I drive? _____

(55) How many positive integers less than 39 are relatively prime to 39? _____

(56) $x + y = 17$ and $x - y = 3$. $x^2 - y^2 =$ _____

(57) $444\frac{4}{9}\%$ of 18 is _____

(58) $1006 \times 1009 =$ _____

(59) Find x if $\frac{1}{6} + \frac{1}{5} = \frac{1}{x}$. _____

***(60)** $e^5 \times 15 =$ _____

(61) $38^2 - 36^2 + 34^2 - 32^2 =$ _____

(62) The sum of the 15^{th} triangular number and the 16^{th} triangular number is _____

(63) The sum of three consecutive even integers is 132. The largest of these is _____

(64) The simple interest on \$1500 at a rate of 6% for 18 months is \$_____

(65) The area of an isosceles trapezoid with a height of 18 and base lengths of 24 and 16 is _____

(66) If the probability that Doug can beat Ken Jennings in Jeopardy is 0.15, then the odds that he does not beat Ken are _____

(67) The first 4 digits of the decimal for $\frac{23}{30}$ is 0._____

(68) The perimeter of an equilateral triangle with height = $6\sqrt{3}$ is _____

(69) $(135)^2 =$ _____

***(70)** $\pi^5 \times 30 =$ _____

(71) $\left(2345_6 \times 11_6\right) =$ _____ 6

(72) 88 base 9 = _____ base 5

(73) If $h(x) = \sqrt{x-2}$, then $h\left(h(38)\right) =$ _____

(74) If (x, y) is the midpoint of the segment with endpoints $(8, 3)$ and $(5, -2)$, then $x + y =$ _____

(75) If $211_b = 106$, then $130_b =$ _____

(76) $\sqrt[3]{19683} =$ _____

(77) $\frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} =$ _____

(78) $\frac{12}{13} - \frac{13}{12} =$ _____

(79) $\left(1^3 + 2^3 + 3^3 + 4^3 + ... + 8^3\right) =$ _____

***(80)** $5678_9 =$ _____ 10

2021-2022 TMSCA MSNS Test 12 Key

(1) 222

(2) 2000

(3) 1500

(4) 8.02

(5) 804

(6) $\frac{22}{25}$

(7) 99

(8) 7194

(9) $\frac{3}{14}$

***(10)** $950-1048$

(11) 2464

(12) 68

(13) .475

(14) 3375

(15) $\frac{1}{4}$ or .25

(16) 47

(17) 91

(18) 8832

(19) 17

***(20)** $25335-28001$

(21) 15

(22) -12

(23) $42\frac{12}{49}$

(24) 36.48

(25) 3610

(26) $54\frac{1}{6}$

(27) 45

(28) $2\frac{4}{99}$

(29) 11865

***(30)** $285-314$

(31) 441

(32) 576

(33) 66

(34) 35

(35) 5

(36) 4104

(37) 60

(38) 8

(39) $\frac{5}{9}$

***(40)** $422-465$

(41) 16

(42) 144

(43) 108

(44) 726

(45) 10

(46) $-\frac{5}{19}$

(47) .42 or $\frac{21}{50}$

(48) 150

(49) 39627

***(50)** 322592-356548

(51) 22

(52) $\frac{142}{333}$

(53) 900

(54) 1296

(55) 24

(56) 51

(57) 80

(58) 1015054

(59) $\frac{30}{11}$ or $2\frac{8}{11}$

***(60)** $2115-2337$

(61) 280

(62) 256

(63) 46

(64) 135.00

(65) 360

(66) $\frac{17}{3}$ or $5\frac{2}{3}$

(67) 7666

(68) 36

(69) 18225

***(70)** $8722-9639$

(71) 30235

(72) 310

(73) 2

(74) 7

(75) 70

(76) 27

(77) $\frac{1}{3}$

(78) $-\frac{25}{156}$

(79) 1296

***(80)** $3992-4412$