

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

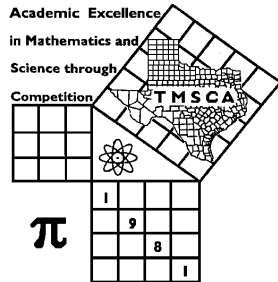
PLACE LABEL BELOW

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 #5 ©

NOVEMBER 17, 2018

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.

2018 – 2019 TMSCA Middle School Number Sense Test #5

- (1) $14 + 17 + 20 + 23 + 26 =$ _____
- (2) $23 - 18 + 33 - 28 + 43 - 38 =$ _____
- (3) $7218 \div 6 =$ _____
- (4) $0.375 =$ _____ (fraction)
- (5) $97 \times 11 =$ _____
- (6) $12 \times 84 =$ _____
- (7) $7814 \div 11$ has a remainder of _____
- (8) $\frac{9}{200} =$ _____ (decimal)
- (9) $18 \times 18 =$ _____
- *(10) $1748 - 3215 + 4739 =$ _____
- (11) $72 \times 75 =$ _____
- (12) $2.3 \times 1.7 =$ _____ (decimal)
- (13) $1216 = 32 \times$ _____
- (14) $93 \times 88 =$ _____
- (15) $200 = 16 \times 12 + 16 \times$ _____
- (16) $5\frac{1}{8} - 2\frac{3}{4} =$ _____ (mixed number)
- (17) Which of $\frac{9}{20}$ and $\frac{13}{30}$ is greater? _____
- (18) $8 \times 8\frac{1}{2} =$ _____
- (19) CCXCVI = _____ (Arabic Numeral)
- *(20) $222.222 \times 359 =$ _____
- (21) 9 feet + 4 inches = _____ inches
- (22) $76 \times 74 =$ _____
- (23) What is the smallest number that has a remainder of 0 when divided by 4, 6, and 7? _____
- (24) $2019 + 201.9 + 20.19 =$ _____ (decimal)
- (25) The sum of the smallest 29 even positive integers is _____
- (26) $107 \times 108 =$ _____
- (27) $45 \times 0.222... =$ _____
- (28) The perimeter of a pentagon with side 2019 is _____
- (29) The next term in the sequence 9, 10, 12, 14, 15, 16, ... is _____
- *(30) $2019^2 \div 44.9^2 =$ _____
- (31) If $9x = 135$, then $x^2 =$ _____
- (32) $2 \times 9 \times 25$ has _____ positive integral divisors
- (33) $4\frac{3}{4} \times 5\frac{1}{4} =$ _____ (mixed number)
- (34) $29^2 - 11^2 =$ _____
- (35) If $3x + 1 = 25$, then $9x^2 + 6x + 1 =$ _____
- (36) How many perfect squares are between 200 and 500? _____
- (37) $27 \times 87 =$ _____
- (38) $22 \times 22 + 66 \times 66 =$ _____
- (39) If $y = 2x - 7$, find x when $y = 9$. $x =$ _____
- *(40) 62.5% of 319000 = _____
- (41) The vertex angle of an isosceles triangle with base angles of 44° is _____ $^\circ$
- (42) $\sqrt{4096} =$ _____

- (43) The length of a rectangle with diagonal 10 and width 6 is _____
- (44) How many edges does a cube have? _____
- (45) If $1 + 2 + 3 + \dots + 35 = 7k$, then $k =$ _____
- (46) If $f(x) = \sqrt{11x + 4}$, then $f(7) =$ _____
- (47) How many 2-element subsets does $\{h,o,r,n,e,t,s\}$ have? _____
- (48) If $x^2 = 7$, then $(x - 5)(x + 5) =$ _____
- (49) $555_6 =$ _____¹⁰
- * (50) Find the length of a the diagonal of a square with side length 700. _____
- (51) If $8! + 10! = n \times 8!$, then $n =$ _____
- (52) $25 \times \frac{23}{21} =$ _____ (mixed number)
- (53) The area of square with diagonal $8\sqrt{3}$ is _____
- (54) A 20-sided polygon has _____ distinct diagonals
- (55) $3^{12} \div 13$ has a remainder of _____
- (56) $63_8 =$ _____²
- (57) $\frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72} =$ _____ (fraction)
- (58) $\sqrt[4]{\frac{81}{16}} =$ _____ (decimal)
- (59) The length of the inner diagonal of a rectangular prism of size $4 \times 4 \times 7$ is _____
- * (60) $\sqrt[3]{210 \times 352} =$ _____
- (61) $1.222\dots =$ _____ (improper fraction)
- (62) $3 = \frac{5}{11} \times$ _____ (mixed number)
- (63) If $2x + 3y = 5$ is perpendicular to $y - 4 = m(x - 11)$, then $m =$ _____
- (64) P and Q are roots of $f(x) = 3x^2 - 5x + 7$. $P^2 + 2PQ + Q^2 =$ _____
- (65) The slope of a line which passes through (5, 3) and (2, -7) is _____
- (66) The roots of $|x - c| = d$ are 8 and 32. $d =$ _____
- (67) If 9×53 is equal to the nth pentagonal number, $n =$ _____
- (68) If $x^2 - 21x + 80 = (x - 16)(x - k)$, then $k =$ _____
- (69) If $f(x)$ is linear with slope $\frac{3}{2}$ and $f(5) = -3$, then $f(15) =$ _____
- * (70) 800 mph = _____ feet per second
- (71) If $\log_3 x + \log_3 27 = \log_3 3$, then $x =$ _____
- (72) The axis of symmetry of $y = 2x^2 - 19x + 13$ is $x =$ _____
- (73) The sum of the 8th pentagonal and the 8th triangular number is _____
- (74) The sum of the solutions of $|x - 12| = 3$ is _____
- (75) The probability of 2 heads occurring when tossing 3 coins is _____
- (76) How many ordered pairs of $2x + 3y = 18$ are nonnegative integers? _____
- (77) $2^4 \times 2^2 \times 2^1 \times 2^{0.5} \times \dots =$ _____
- (78) $\frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72} + \frac{1}{9} =$ _____ (fraction)
- (79) If $3x - y = 11$ and $2x + y = 24$, then $x =$ _____
- * (80) 128 gallons = _____ ounces

2018-2019 TMSCA Middle School Number Sense Key #5

- (1) 100
(2) 15
(3) 1203
(4) $\frac{3}{8}$
(5) 1067
(6) 1008
(7) 4
(8) .045
(9) 324
*(10) 3109 – 3435
(11) 5400
(12) 3.91
(13) 38
(14) 8184
(15) .5 or $\frac{1}{2}$
(16) $2\frac{3}{8}$
(17) $\frac{9}{20}$
(18) 68
(19) 296
*(20) 75789 – 83766
(21) 112
(22) 5624
- (23) 84
(24) 2241.09
(25) 870
(26) 11556
(27) 10
(28) 10095
(29) 18
*(30) 1921 – 2123
(31) 225
(32) 18
(33) $24\frac{15}{16}$
(34) 720
(35) 625
(36) 8
(37) 2349
(38) 4840
(39) 8
*(40) 189407 – 209343
(41) 92
(42) 64
- (43) 8
(44) 12
(45) 90
(46) 9
(47) 21
(48) – 18
(49) 215
*(50) 941 – 1039
(51) 91
(52) $27\frac{8}{21}$
(53) 96
(54) 170
(55) 1
(56) 110011
(57) $\frac{4}{45}$
(58) 1.5
(59) 9
*(60) 40 – 44
(61) $\frac{11}{9}$
(62) $6\frac{3}{5}$
- (63) 1.5, $1\frac{1}{2}$, or $\frac{3}{2}$
(64) $2\frac{7}{9}$ or $\frac{25}{9}$
(65) $3\frac{1}{3}$ or $\frac{10}{3}$
(66) 12
(67) 18
(68) 5
(69) 12
*(70) 1115 – 1232
(71) $\frac{1}{9}$
(72) 4.75, $4\frac{3}{4}$, or $\frac{19}{4}$
(73) 128
(74) 24
(75) $\frac{3}{8}$ or .375
(76) 4
(77) 256
(78) $\frac{1}{5}$
(79) 7
*(80) 15565 – 17203