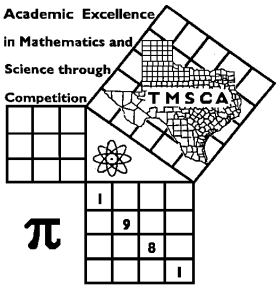
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

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 16, 2019

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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2018 – 2019 TMSCA Middle School Number Sense Test #12

(1) $2000 - 573 =$ _____

(2) $2019 \times 6 =$ _____

(3) $782665 \div 13 =$ _____

(4) $0.95 =$ _____ (fraction)

(5) $37 \times 11 =$ _____

(6) $8124 \div 9$ has a remainder of _____

(7) $13\frac{1}{3}\% =$ _____ (fraction)

(8) $53 \times 13 =$ _____

(9) $11^2 =$ _____

***(10)** $1625 - 793 + 1487 =$ _____

(11) $184 \times 25 =$ _____

(12) $8.7 \times 83 =$ _____ (decimal)

(13) $77 \times 37 =$ _____

(14) $28 \times 12 =$ _____

(15) $106 \times 112 =$ _____

(16) $63 \times 33\frac{1}{3} =$ _____

(17) $96 \times 87 =$ _____

(18) $6 \times 13\frac{1}{2} =$ _____

(19) $\frac{11}{13} + \frac{2}{3} =$ _____ (improper fraction)

***(20)** $444 \times 639 =$ _____

(21) $11 \div \frac{2}{3} =$ _____ (mixed number)

(22) $0.696969\ldots =$ _____ (fraction)

(23) $65 \times 42 =$ _____

(24) $618 \div 5 =$ _____ (mixed number)

(25) The smallest positive number with a remainder of 0 when divided by 12 and 28 is _____

(26) $1 + 3 + 5 + 7 + \ldots + 45 =$ _____

(27) $14 \div 13 + 20 \div 13 + 57 \div 13 =$ _____

(28) 16 % of 55 = _____ (decimal)

(29) The square root of 3025 is _____

***(30)** $\frac{17!}{14!} =$ _____

(31) If $8x = 56$, then $x^3 =$ _____

(32) $(13^2 + 39^2) + (13^2 + 26^2) = 13^2 \times$ _____

(33) $77^2 - 23^2 =$ _____

(34) $\frac{6}{11} + \frac{11}{6} =$ _____ (mixed number)

(35) $7\frac{1}{4}$ gallons = _____ quarts

(36) If $x = 15$, $y = 3$, $k > 0$, and $x^2 + 12xy + 36y^2 = k^2$, then $k =$ _____

(37) $6\frac{4}{9} \times 6\frac{5}{9} =$ _____ (mixed number)

(38) $5\frac{5}{9} \times 6\frac{4}{9} =$ _____ (mixed number)

(39) $4^3 \times 3^3$ has _____ positive integral divisors

***(40)** $239 \times 127 + 239 \times 395 =$ _____

(41) $\sqrt{6724} =$ _____

(42) $f(x) = \frac{x(x+5)}{2}$. $f(13) =$ _____

(43) The area of a trapezoid is 70. The height is 7, one base is 8, the other base is _____

(44) If 15 pens cost \$12.00, then a dozen pens cost \$ _____

(45) $29^2 + 21^2 =$_____

(46) $\sqrt{4096} =$ _____

(47) The measure of the exterior angle of an undecagon _____ °

(48) $1200 = 36 \times 33 +$_____

(49) $121_{12} =$_____$_{10}$

***(50)** $12^3 \times 23 =$_____

(51) The set {a,b,c,d,e,f} has_____ 3-element subsets

(52) $11 \times \frac{13}{14} =$_____ (mixed number)

(53) If f(x) = 12x + b, and f(7) = 95, then b =_____

(54) $73_9 - 26_9 =$ _____$_9$

(55) $29^2 - 11^2 =$_____

(56) If f(5x – 1) = 3x + 10, then f(19) =_____

(57) The sum of the solutions of $|2x - 11| = 16$ is ____

(58) The slope of a line with x-intercept (4, 0) which passes through (8, 14) is_____

(59) A regular polygon with n vertices has 44 distinct diagonals, n =_____

***(60)** The area of an equilateral triangle with side 40 is _____

(61) The length of the inner diagonal of a rectangular prism of size 4 by 5 by 20 is_____

(62) $\sqrt[3]{\frac{216}{125}} =$_____(mixed number)

(63) $9^{30} \div 31$ has a remainder of _____

(64) If w, x, 11, 13, y, z, … forms an arithmetic sequence, then w + x + y + z = _____

(65) P and Q are roots of $f(x) = x^2 - 7x + 10$. $P^2 + 4PQ + Q^2 =$ _____

(66) $237 \times 111 =$_____

(67) $1_8 + 2_8 + 3_8 + \ldots + 12_8 =$ _____$_8$

(68) $0.87777\ldots =$ _____ (fraction)

(69) The axis of symmetry of f(x) = (2x – 7)(x + 5) is x = _____

***(70)** The 80^{th} pentagonal number is_____

(71) The geometric mean of 3^7, 3^{10} and 3^{16} is 3^x, x = _____

(72) If the roots of $f(x) = x^2 + bx + c$ are 3 and 13, then b =_____

(73) The x-coefficient of (x + 1)(x + 2)(x + 3) is_____

(74) The y-intercept of $f(x) = 3(x - 2)^2 + 8$ is_____

(75) If $\frac{13!}{9!} + 1 = k^2$, where k > 0. k =_____

(76) $(2^7)(3^3)(5^6) =$ _____

(77) If there are 9 red marbles and G green marbles in a bag and the probability of drawing a red marble is $\frac{3}{8}$, then G =_____

(78) log 12 + log 25 – log 3 =_____

(79) $\frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{8} =$ _____ (fraction)

***(80)** $35^3 =$_____

2018-2019 TMSCA Middle School Number Sense Key #12

(1) 1427

(2) 12114

(3) 60205

(4) $\frac{19}{20}$

(5) 407

(6) 6

(7) $\frac{2}{15}$

(8) 689

(9) 121

***(10) 2204 – 2434**

(11) 4600

(12) 722.1

(13) 2849

(14) 336

(15) 11872

(16) 2100

(17) 8352

(18) 81

(19) $\frac{59}{39}$

***(20) 269531 – 297901**

(21) $16\frac{1}{2}$

(22) $\frac{23}{33}$

(23) 2730

(24) $123\frac{3}{5}$

(25) 84

(26) 529

(27) 7

(28) 8.8

(29) 55

***(30) 3876 – 4284**

(31) 343

(32) 15

(33) 5400

(34) $2\frac{25}{66}$

(35) 29

(36) 33

(37) $42\frac{20}{81}$

(38) $35\frac{65}{81}$

(39) 28

***(40) 118521 – 130995**

(41) 82

(42) 117

(43) 12

(44) 9.60

(45) 1282

(46) 64

(47) $\frac{360}{11}$ or $32\frac{8}{11}$

(48) 12

(49) 169

***(50) 37757 – 41731**

(51) 20

(52) $10\frac{3}{14}$

(53) 11

(54) 46

(55) 720

(56) 22

(57) 11

(58) $\frac{7}{2}$, $3\frac{1}{2}$, or 3.5

(59) 11

***(60) 659 – 727**

(61) 21

(62) $1\frac{1}{5}$

(63) 1

(64) 48

(65) 69

(66) 26307

(67) 67

(68) $\frac{79}{90}$

(69) $-\frac{3}{4}$ or $-.75$

***(70) 9082 – 10038**

(71) 11

(72) – 16

(73) 11

(74) 20

(75) 131

(76) 54000000

(77) 15

(78) 2

(79) $\frac{1}{5}$

***(80) 40732 – 45018**