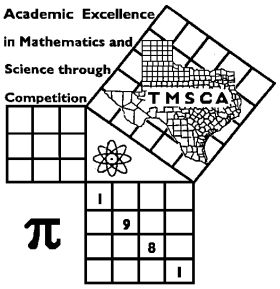
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

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 #4©

NOVEMBER 10, 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.

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2018 – 2019 TMSCA Middle School Number Sense Test #4

(1) $937 - 739 =$ _____

(2) $12 \times 72 =$ _____

(3) $323 \div 5 =$ _____ **(decimal)**

(4) $95 \times 11 =$ _____

(5) $243 \div 9 =$ _____

(6) $0.48 =$ _____ **(fraction)**

(7) $27814 \div 9$ **has a remainder of** _____

(8) $26^2 =$ _____

(9) $45 \times 28 =$ _____

***(10)** $293 \times 88 =$ _____

(11) $45 \times 33\frac{1}{3} =$ _____

(12) $\frac{2}{5} + \frac{4}{7} =$ _____ **(fraction)**

(13) $9016 = 98 \times$ _____

(14) $1 + 2 + 3 + 4 + \ldots + 44 =$ _____

(15) $83 \times 77 =$ _____

(16) $8\frac{2}{5} - 6.5 =$ _____ **(mixed number)**

(17) $112 \times 12 =$ _____

(18) $64 \times 12\frac{1}{2} =$ _____

(19) $37 \times 72 =$ _____

***(20)** $729 \times 774 =$ _____

(21) 15 feet = _____ **inches**

(22) $888 \times 101 =$ _____

(23) 2 quarts + 3 pints + 5 cups = _____ **cups**

(24) The largest prime divisor of 135 is _____

(25) The sum of the composite numbers between 25 and 30 is _____

(26) $2 + 5 + 8 + 11 + \ldots + 29 =$ _____

(27) $\frac{1}{12} + \frac{3}{12} + \frac{5}{12} + \cdots + \frac{17}{12} =$ _____ **(mixed number)**

(28) The area of a rectangle with sides 5.5 and 6.5 is _____ **(decimal)**

(29) $3551 = 67 \times$ _____

***(30)** $2 + 4 + 6 + \ldots + 898 =$ _____

(31) $109^2 =$ _____

(32) $16^2 + 32^2 =$ _____

(33) $2 \times 3 \times 5 \times 7$ **has** _____ **positive integral divisors**

(34) The perimeter of a right triangle with legs 6 and 8 is _____

(35) $0.155 =$ _____ **(fraction)**

(36) If $1 + 3 + 5 + \ldots + k = 45^2$, then $k =$ _____

(37) $7\frac{3}{10} \times 7\frac{7}{10} =$ _____ **(decimal)**

(38) The first sum of the first 15 positive multiples of 7 is how much greater than the sum of the first 15 positive even numbers? _____

(39) If $2x + 5 = 47$, then $x =$ _____

***(40)** $\sqrt{74624} =$ _____

(41) $\sqrt{7225} =$ _____

(42) A set with 256 subsets has _____ **elements**

(43) Find the area of a trapezoid with bases of 12 and 22, with a height of 17. _____

(44) $15 \times 10\frac{2}{3}$ =_____

(45) If 2 + 4 + 6 + 8 + … + 36 = 18k, then k =_____

(46) If $\frac{x-3}{7} = \frac{1}{2}$, then x =_____

(47) If $f(x) = \sqrt{3x+1}$ and f(k) = 7, then k =_____

(48) 251_8 =_____$_{10}$

(49) $23^2 + 27^2$ =_____

*(50) The 80th pentagonal number is_____

(51) $23 \times \frac{21}{19}$ =_____ (mixed number)

(52) $4 - \left(\frac{4}{7} + \frac{7}{4}\right)$ =_____(mixed number)

(53) Let f(x) = 3x + 14, and
f(p) – f(q) = 135, then p – q =_____

(54) $12\frac{1}{3} \times 9\frac{1}{3}$ =_____(mixed number)

(55) How many terms does the arithmetic
sequence 1, 5, 9, 13, …, 501 have?_____

(56) $63_8 \times 11_8$ = _____$_8$

(57) A square pyramid with a base of side
length 6 and height 10 has a volume of_____

(58) If the two solutions of
$|x - c| = d$ are 7 and 19, then d = _____

(59) 2x – 3 y = 17 is perpendicular
to Ax + 6y = 15, then A = _____

*(60) 142857×91 =_____

(61) $(23_8)^2 - (20_8)^2$ =_____$_8$

(62) $2 = \frac{4}{13} \times$ _____(mixed number)

(63) The sum of the positive
integer solutions of 3x – 5 < 14 is _____

(64) 0.48888… = _____ (fraction)

(65) The midpoint of
(2, 5) and (7, 11) is (a, b). a + b =_____

(66) If y – k = 2(x – 5) passes through (2, 7), k = _____

(67) $x^2 - 19x + C = (x - 7)(x - A)$, and
A and C are constants, then A = _____

(68) The sum of the
positive integral divisors of 50 is_____

(69) How many positive integers less than
or equal to 35 are relatively prime to 35?_____

*(70) $\sqrt{573}\sqrt{2000}$ = _____

(71) $\frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{7}$ = _____(fraction)

(72) The y-coordinate of the
vertex of $f(x) = x^2 - 6x + 17$ is_____

(73) Find the probability of rolling a
sum of 7 when rolling two 6-sided die. _____

(74) How many distinct 7-letter arrangements
can be made from {f,o,o,t,a,l,l }? _____

(75) The discriminant of $4x^2 - 9x + 3 = 0$ is_____

(76) The sum of the integral
solutions of $|x - 11| \le 24$ is _____

(77) $3^2 \times 3^1 \times 3^{0.5} \times 3^{0.25} \times ...$ =_____

(78) The sum of the roots
of $2x^3 - 5x^2 + 7x - 13 = 0$ is_____

(79) If $\log_4 x = 3.5$, then x =_____

*(80) The volume of a cube
with an edge of 95 is_____

2018-2019 TMSCA Middle School Number Sense Key #4

(1) 198

(2) 864

(3) 64.6

(4) 1045

(5) 27

(6) $\frac{12}{25}$

(7) 4

(8) 676

(9) 1260

***(10) 24495 – 27073**

(11) 1500

(12) $\frac{34}{35}$

(13) 92

(14) 990

(15) 6391

(16) $1\frac{9}{10}$

(17) 1344

(18) 800

(19) 2664

***(20) 536034 – 592458**

(21) 180

(22) 89688

(23) 19

(24) 5

(25) 81

(26) 155

(27) $6\frac{3}{4}$

(28) 35.75

(29) 53

***(30) 191948 – 212152**

(31) 11881

(32) 1280

(33) 16

(34) 24

(35) $\frac{31}{200}$

(36) 89

(37) 56.21

(38) 600

(39) 21

***(40) 260 – 286**

(41) 85

(42) 8

(43) 289

(44) 160

(45) 19

(46) 6.5, $6\frac{1}{2}$, or $\frac{13}{2}$

(47) 16

(48) 169

(49) 1258

***(50) 9082 – 10038**

(51) $25\frac{8}{19}$

(52) $1\frac{19}{28}$

(53) 45

(54) $115\frac{1}{9}$

(55) 126

(56) 713

(57) 120

(58) 6

(59) 9

***(60) 12349988–13649986**

(61) 151

(62) $6\frac{1}{2}$

(63) 21

(64) $\frac{22}{45}$

(65) 12.5, $12\frac{1}{2}$, or $\frac{25}{2}$

(66) 13

(67) 12

(68) 93

(69) 24

***(70) 1017 – 1124**

(71) $\frac{1}{4}$

(72) 8

(73) $\frac{1}{6}$

(74) 1260

(75) 33

(76) 539

(77) 81

(78) 2.5, $2\frac{1}{2}$, or $\frac{5}{2}$

(79) 128

***(80) 814507 – 900243**