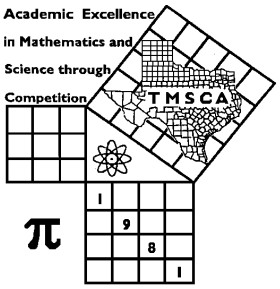
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

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 #11©

FEBRUARY 9, 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 #11

(1) $2019 - 376 =$ _____

(2) $2011 + 2015 + 2019 + 2023 + 2027 =$ _____

(3) $635445 \div 9 =$ _____

(4) $53 \times 14 =$ _____

(5) $11\frac{1}{4}\% =$ _____ (fraction)

(6) $7315 \div 11$ has a remainder of _____

(7) $\frac{11}{18} \times 90 =$ _____

(8) $16^2 =$ _____

(9) $4 + 21 \times 5 \div 3 - 17 =$ _____

***(10)** $4532 + 517 + 34 =$ _____

(11) $65 \times 24 =$ _____

(12) $1 + 2 + 3 + 4 + \ldots + 40 =$ _____

(13) $25 \times 64 =$ _____

(14) $76 \times 36 =$ _____

(15) $48 \times 52 =$ _____

(16) $120 \times 12.5 =$ _____

(17) $\frac{20 \times 28 \times 36}{5 \times 7 \times 9} =$ _____

(18) $15 \times 6\frac{1}{3} =$ _____

(19) $(\text{XCV})^2 =$ _____ (Arabic Numeral)

***(20)** $329 \times 731 =$ _____

(21) $9.2 \times 9.7 =$ _____(decimal)

(22) The smallest positive integer that is one less than a multiple of 5 and 11 is _____

(23) $16 \times 14\ \frac{1}{16} =$ _____

(24) The LCM of 40 and 64 is _____

(25) The cube root of 343 is _____

(26) 2019 has _____ positive integral divisors

(27) $9 \div 11 + 17 \div 11 + 51 \div 11 =$ _____

(28) The multiplicative inverse of 4.2 is _____

(29) The number of prime numbers between 75 and 85 is _____

***(30)** $\sqrt{58201} =$ _____

(31) If the largest angle in an isosceles triangle is 122°, then the measure of the smallest angle is _____°

(32) 105 has how many distinct prime divisors? _____

(33) 6 yards + 2 feet + 5 inches = _____ inches

(34) Find the total cost of a $24.00 item with a sales tax rate of 7.5%. $ _____

(35) $17^2 + 34^2 =$ _____

(36) If a dozen pencils cost $3.48, then 3 pencils cost $ _____

(37) $748 \times 101 =$ _____

(38) $\frac{5}{13} + \frac{13}{5} =$ _____(mixed number)

(39) The set {l,a,t,i,n} has _____proper subsets

***(40)** $\sqrt{145 \times 5624} =$ _____

(41) A square with area 1444 has a side of _____

(42) The sum of the first 19 positive odd integers is how much greater than the sum of the first 6 positive odd integers? _____

(43) If $1 + 2 + 3 + 4 + \ldots + 95 = 95k$, then $k =$ _____

(44) The perimeter of a regular 18-sided polygon with sides of $33\frac{1}{3}$ is _____

(45) $34^2 + 36^2 =$_____

(46) The 10^{th} pentagonal number is_____

(47) The sum of the measures of the interior angles of a nonagon is _____°

(48) How many distinct diagonals can be drawn inside a nonagon?_____

(49) $1331_7 =$ _____$_{10}$

***(50)** The area of a rhombus with diagonals 432 and 750 is_____

(51) How many positive terms does the sequence 123, 113, 103, …, have?_____

(52) $11\frac{3}{4} \times 9\frac{3}{4} =$_____(mixed number)

(53) $9 \times 10 \times 11 \times 12 + 1 =$_____

(54) If $2^{3x-9} = 4^{x+5}$, then x = _____

(55) $63_8 =$ _____$_2$

(56) $7^{11} \div 11$ has a remainder of_____

(57) How much greater is the positive solution of $|x - 11| = 16$ than the negative solution? _____

(58) If $x(x + 4) > 125$, then the smallest integer value of x is_____

(59) The line $3x + 5y = 45$ has an x-intercept of _____

***(60)** The diagonal of a square with side 650 is _____

(61) The smaller root of $x^2 - 7x - 78 = 0$ is _____

(62) $35 \times 95 =$_____

(63) $0.636363\ldots = \frac{a}{b}$, where a and b have no common factors. a + b =_____

(64) The distance between (4, 11) and (9, 23) is _____

(65) P and Q are roots of $f(x) = 3x^2 - 12x + 4$. $P^2 + 2PQ + Q^2 + 3PQ =$ _____

(66) The slope of the line perpendicular to $9x - 6y = 12$ is_____

(67) The sum of the integral solutions of $|x - 5| \leq 10.9$ is_____

(68) The smallest triangular number divisible by 25 is _____

(69) How many positive integers less than or equal to 45 are relatively prime to 45?_____

***(70)** The volume of a tetrahedron with an edge of 9 is _____

(71) Find the probability of rolling a sum less than 5 when rolling two 6-sided die?_____

(72) If $f(x) = 2x^2 + kx + 9$ and f(x) has an axis of symmetry of x = 4 then k =_____

(73) The number of triangles which can be drawn in an undecagon from a given vertex is _____

(74) $15^2 + 105^2 =$_____

(75) If $2x^2 + 9x + c = 0$ has 1 distinct real root, c =____

(76) $64^{\frac{3}{2}} =$ _____

(77) $f(x) = x^3 + 24x^2 - 11x - 125$ has roots P, Q, and R. The geometric mean of P, Q, and R is_____

(78) $5 + 1 + 0.2 + \ldots =$_____ (decimal)

(79) $1 + 2 + 2^2 + 2^3 + 2^4 + 2^5 + 2^6 =$ _____

***(80)** Find the volume of a sphere with a diameter of 20?_____

2018-2019 TMSCA Middle School Number Sense Key #11

(1) 1643

(2) 10095

(3) 70605

(4) 742

(5) $\frac{9}{80}$

(6) 0

(7) 55

(8) 256

(9) 22

***(10) 4829 – 5337**

(11) 1560

(12) 820

(13) 1600

(14) 2736

(15) 2496

(16) 1500

(17) 64

(18) 95

(19) 9025

***(20) 228475 – 252523**

(21) 89.24

(22) 54

(23) 225

(24) 320

(25) 7

(26) 4

(27) 7

(28) $\frac{5}{21}$

(29) 2

***(30) 230 – 253**

(31) 29

(32) 3

(33) 245

(34) 25.80

(35) 1445

(36) .87

(37) 75548

(38) $2\frac{64}{65}$

(39) 31

***(40) 858 – 948**

(41) 38

(42) 325

(43) 48

(44) 600

(45) 2452

(46) 145

(47) 1260

(48) 27

(49) 512

***(50) 153900 – 170100**

(51) 13

(52) $114\frac{9}{16}$

(53) 11881

(54) 19

(55) 110011

(56) 7

(57) 32

(58) 10

(59) 15

***(60) 874 – 965**

(61) – 6

(62) 3325

(63) 18

(64) 13

(65) 20

(66) $-\frac{2}{3}$

(67) 105

(68) 300

(69) 24

***(70) 82 – 90**

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

(72) – 16

(73) 45

(74) 11250

(75) $\frac{81}{8}$**,** $10\frac{1}{8}$**, or 10.125**

(76) 512

(77) 5

(78) 6.25

(79) 127

***(80) 3980 – 4398**