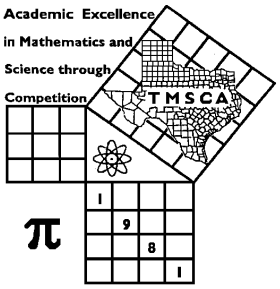
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

PLACE LABEL BELOW

Name:_____ School:_____

SS/ID Number:_____ City:_____

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



TMSCA MIDDLE SCHOOL

NUMBER SENSE

TEST #11©

FEBRUARY 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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2017-2018 TMSCA Middle School Number Sense Test 11

(1) $2018 + 324$ = _____

(2) 23×8 = _____

(3) $7824 \div 6$ = _____

(4) 45×25 = _____

(5) 12×44 = _____

(6) $7143 \div 9$ has a remainder of _____

(7) The largest multiple of 13 less than 100 is_____

(8) $87\frac{1}{2}\%$ = _____ (fraction)

(9) $\frac{11}{15} \times 60$ =_____

***(10)** $123 - 2018 + 4361$ = _____

(11) Which of the following is greater, $\frac{1}{2}$ or $\frac{1009}{2017}$? _____

(12) $55 \div 2.5$ =_____

(13) 37×43 = _____

(14) 4 feet + 6 inches = _____ yards

(15) $38 \times 43 + 12 \times 43$ =_____

(16) 0.16666… =_____(fraction)

(17) 76×36 = _____

(18) $24 \times 87\frac{1}{2}$ = _____

(19) The mean of 14, 17 and_____ is 20

***(20)** 667×693 = _____

(21) 9.3×9.3 = _____(decimal)

(22) 148×11 =_____

(23) $8928 = 93 \times$ _____

(24) $637 \div 5$ =_____ (mixed number)

(25) 346×111 = _____

(26) The LCM of 14 and 49 is_____

(27) 64×12.5 = _____

(28) $2 + 4 + 6 + \ldots + 32$ =_____

(29) How many even integers are between 16 and 72?_____

***(30)** $48731 \div 213$ =_____

(31) $22^2 + 66^2$ =_____

(32) 66 has how many distinct prime divisors? _____

(33) 5 gallons = _____cubic inches

(34) How much does the sum of the smallest 15 positive odd integers exceed the sum of the smallest 5 positive odd integers? _____

(35) If the area of a rectangle is 84 and the perimeter is 40, then the longer side is _____

(36) 75 has how many positive integral divisors?_____

(37) $\frac{1+3+5+\ldots+23}{1+3+5}$ =_____

(38) $8\frac{3}{8} \times 8\frac{5}{8}$ =_____ (mixed number)

(39) $\sqrt{7056}$ = _____

***(40)** $639 \times 254 + 641 \times 405$ =_____

(41) If $\frac{2x+5}{9} = 5$, then x = _____

(42) $\frac{5}{9} + \frac{9}{5}$ = _____(mixed number)

(43) If the two bases of a trapezoid are 13 and 34, find the median of the trapezoid._____

(44) The sum of the interior angles of an octagon is _____°

(45) A set with 8 elements has _____subsets

(46) 83^2 =_____

(47) An undecagon has_____ distinct diagonals

(48) The 6^{th} pentagonal number is_____

(49) 84_{12} =_____$_{10}$

***(50)** $\sqrt{50341}$ = _____

(51) $18 \times \frac{18}{19}$ =_____(mixed number)

(52) $6 \times 7 \times 8 \times 9 + 1$ =_____

(53) $\frac{5!+7!}{6!}$ =_____(mixed number)

(54) Find the slope of a line with x-intercept 4 which passes through (6, 5)._____

(55) $7 + 11 + 15 + \ldots + 47$ =_____

(56) $\left(11^3 + 8^7\right) \div 9$ has a remainder of _____

(57) $634_9 - 246_9$ =_____$_9$

(58) The y–intercept of $f(x) = 4|x - 3| + 5$ is (0, 17). There is another point on the graph with coordinates (q, 17), q =_____

(59) If $f(x^2) = 2x + 5$ and $x < 0$, then f(36) =_____

***(60)** $29^2 + 30^2 + 31^2 + 32^2$ = _____

(61) The set {c,l,i,n,t} has_____ 4-element subsets

(62) $\left(13_8\right)^2$ =_____$_8$

(63) If $x^2 = 50$, then $(3x - 4)(3x + 4)$ = _____

(64) If $f(x) = 5x^2 + 7$, then f(11) – f(9) = _____

(65) What is the x^2 coefficient of $(4x^2 + 5x + 5)(x - 3)$?_____

(66) The following lines are parallel: $5x - 4y = 13$ and $Ax - 32y = 92$, A = _____

(67) If $5^4 + 10^4 = 5^4(k)$, then k = _____

(68) If $\left(\sqrt{2^3 \times 5^2 \times 7}\right) \times \left(\sqrt{k}\right)$ is a positive integer, find the smallest positive integer value of k._____

(69) How many triangles can be drawn from a given vertex of a decagon?_____

***(70)** Find the surface area of a hexahedron with edge 32. _____

(71) If P and Q are roots of $4x^2 - 13x + c = 0$ and PQ = 21, then c =_____

(72) If f(x) = 17x + 32, and f(30) – f(k) = 289, then k = _____

(73) If $f(x) = x^3 + 3x^2 + 3x + 1$, then f(5) = _____

(74) 608^2 =_____

(75) f(x) is a parabola with a vertex of (5, 3) and g(x) = 3f(x – 2) + k. If g(x) has a vertex of (7, 15), then k =_____

(76) The probability of choosing a positive integer, k, $k < 21$ whose square is a two digit number is____

(77) f(x) = 2(x + 4)(x – 3) has how many roots that are positive and real?_____

(78) P, Q, and R are roots of $3x^3 - 48x^2 + 13 = 0$. The arithmetic mean of P, Q, and R is_____

(79) If $\sqrt{2x + 3} + 2 = 11$, then x =_____

***(80)** $243 \times 799 \times \frac{4}{9}$ = _____

2017-2018 TMSCA Middle School Number Sense Key #11

(1) 2342

(2) 184

(3) 1304

(4) 1125

(5) 528

(6) 6

(7) 91

(8) $\frac{7}{8}$

(9) 44

***(10) 2343 – 2589**

(11) $\frac{1009}{2017}$

(12) 22

(13) 1591

(14) 1.5, $1\frac{1}{2}$ **or** $\frac{3}{2}$

(15) 2150

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

(17) 2736

(18) 2100

(19) 29

***(20) 439120 – 485342**

(21) 86.49

(22) 1628

(23) 96

(24) $127\frac{2}{5}$

(25) 38406

(26) 98

(27) 800

(28) 272

(29) 27

***(30) 218 – 240**

(31) 4840

(32) 3

(33) 1155

(34) 200

(35) 14

(36) 6

(37) 16

(38) $72\frac{15}{64}$

(39) 84

***(40) 400816 – 443006**

(41) 20

(42) $2\frac{16}{45}$

(43) 23.5, $23\frac{1}{2}$ **or** $\frac{47}{2}$

(44) 1080

(45) 256

(46) 6889

(47) 44

(48) 51

(49) 100

***(50) 214 – 235**

(51) $17\frac{1}{19}$

(52) 3025

(53) $7\frac{1}{6}$

(54) 2.5, $2\frac{1}{2}$ **or** $\frac{5}{2}$

(55) 297

(56) 7

(57) 377

(58) 6

(59) – 7

***(60) 3540 – 3912**

(61) 5

(62) 171

(63) 434

(64) 200

(65) – 7

(66) 40

(67) 17

(68) 14

(69) 36

***(70) 5837 – 6451**

(71) 84

(72) 13

(73) 216

(74) 369664

(75) 6

(76) $\frac{3}{10}$ **or .3**

(77) 1

(78) $5\frac{1}{3}$ **or** $\frac{16}{3}$

(79) 39

***(80) 81978 – 90606**