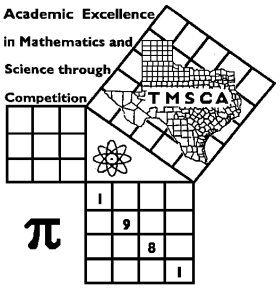
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

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#5©

NOVEMBER 14, 2020

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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2020-2021 TMSCA Middle School Number Sense Test 5

(1) $862 + 444 =$ _____

(2) $225 - 235 =$ _____

(3) $125\% =$ _____ (decimal)

(4) $48 \div 9 =$ _____ (mixed number)

(5) $17 + 20 + 23 =$ _____

(6) $309 \times 11 =$ _____

(7) $8 \times 9 + 8 \times 21 =$ _____

(8) $\frac{7}{8} - \frac{3}{4} =$ _____ (fraction)

(9) $23^2 =$ _____

*(10) $459 + 387 + 776 =$ _____

(11) MMCXXI = _____ (Arabic numeral)

(12) $82 \times 88 =$ _____

(13) $6\frac{1}{3} + 3\frac{4}{5} =$ _____ (mixed number)

(14) The GCF of 36 and 48 is _____

(15) $55 \times 35 =$ _____

(16) The largest prime number less than 53 is ___

(17) $59^2 =$ _____

(18) $\frac{6}{11} \div \frac{3}{22} =$ _____

(19) $5\frac{1}{5} \times 10\frac{1}{5} =$ _____ (mixed number)

*(20) $7832 \div 82 =$ _____

(21) 9 is what percent of 6? _____%

(22) $12 \times 146 =$ _____

(23) $6\frac{1}{4} \times 6\frac{3}{4} =$ _____ (mixed number)

(24) $92 \times 99 =$ _____

(25) 1 gallon = _____ ounces

(26) $44^2 + 36^2 =$ _____

(27) $13^3 =$ _____

(28) If $A = \{1, 3, 5, 7, 9\}$ and $B = \{3, 4, 5, 6, 7\}$, then $A \cup B$ has how many elements? _____

(29) $39 \times 25 =$ _____

*(30) $\sqrt{416753} =$ _____

(31) 66 base 10 = _____ base 4

(32) $|14 - 8| + |5 - 11| =$ _____

(33) If $f(x) = x^2 - 6x + 9$, then $f(20) =$ _____

(34) If Doug has $3.30 in nickels, then he has _____ nickels

(35) $39^2 - 31^2 =$ _____

(36) Two numbers have a sum of 21, a product of 104, and a positive difference of _____

(37) The number of positive integral divisors of 54 is _____

(38) If $2^{3x} = 32$, then $x =$ _____

(39) A nonagon has _____ diagonals

*(40) $142.857 \times 212 =$ _____

(41) $\frac{13}{12} - \frac{12}{13} =$ _____

(42) 12% of 24 is 16% of _____

(43)The volume of a cylinder with radius = 5 m and height = 9 m is _____ π m^3

(44) $\frac{5}{7}$ of a gallon = _____ cubic inches

(45) How many integers between 12 and 82 are divisible by 8? _____

(46) $286 \times 42 =$ _____

(47) $\frac{23}{40} =$ _____ (decimal)

(48) The measure of an interior angle of a regular decagon is_____°

(49) $995 \times 992 =$ _____

***(50) $\sqrt[3]{733} \times \sqrt[3]{520} =$ _____**

(51) $2664 \div 111 =$ _____

(52) $A = \{1, 3, 6, 10, 15, 21, 28, k, ...\}$ k = _____

(53) $(654_8)(5_8) =$ _____ $_8$

(54) $0.0272727... =$ _____ (fraction)

(55)The sum of the positive factors of 40 is _____

(56) The multiplicative inverse of 2.4 is _____

(57) $1008 \times 1009 =$ _____

(58) $266\frac{2}{3}\%$ of 36 = _____

(59) If $(7x - 2)(5x + 4) = ax^2 + bx + c$, then b = _____

***(60) $12^4 \times 14 \div 12^2 =$ _____**

(61) 45 mph = _____ ft/s

(62) The 20th triangular number is _____

(63) The sum of the positive integers x such that $3x + 4 \le 16$ is _____

(64) $23 \times 25 + 1 =$ _____

(65) 25% of 36 minus 75% of 60 is _____

(66) The simple interest on $800 at a rate of 6% for 9 months is $_____

(67) The area of an isosceles trapezoid with a height of 12 and base lengths of 16 and 20 is _____

(68) If $f(x) = \frac{4x - 6}{3} + 12$, then $f^{-1}(-2) =$ _____

(69) $55_6 - 22_6 - 13_6 =$ _____ $_6$

***(70) $31^4 =$ _____**

(71)If the probability that Ross can finish a NS test is 0.95, then the odds that he does not finish a NS test are _____ (fraction)

(72) The first four digits of the decimal for $\frac{8}{45}$ is 0._____

(73) $5^6 \div 12$ has a remainder of _____

(74) If x = 15 and y = 2, then $x^2 - 2xy + y^2 =$ _____

(75) The volume of a sphere with a radius of 6 cm is _____π cm^3

(76) $9 \times \frac{11}{16} =$ _____ (mixed number)

(77) $5 + 10 + 15 + 20 + ... + 65 =$ _____

(78) The distance between the points (4, 9) and (–2, 3) is k. $k^2 =$ _____

(79)The probability of randomly selecting a black jack from a standard deck of cards is ____

***(80) $(1 + 2 + 3 + 4 + 5 + ... + 15 + 16)^2 =$ _____**

2020-2021 TMSCA MSNS Test 5 Key

(1) 1306

(2) -10

(3) 1.25

(4) $5\frac{1}{3}$

(5) 60

(6) 3399

(7) 240

(8) $\frac{1}{8}$

(9) 529

***(10) 1541–1703**

(11) 2121

(12) 7216

(13) $10\frac{2}{15}$

(14) 12

(15) 1925

(16) 47

(17) 3481

(18) 4

(19) $53\frac{1}{25}$

***(20) 91–100**

(21) 150

(22) 1752

(23) $42\frac{3}{16}$

(24) 9108

(25) 128

(26) 3232

(27) 2197

(28) 7

(29) 975

***(30) 614–677**

(31) 1002

(32) 12

(33) 289

(34) 66

(35) 560

(36) 5

(37) 8

(38) $\frac{5}{3}$ or $1\frac{2}{3}$

(39) 27

***(40) 28772–31799**

(41) $\frac{25}{156}$

(42) 18

(43) 225

(44) 165

(45) 9

(46) 12012

(47) .575

(48) 144

(49) 987040

***(50) 69–76**

(51) 24

(52) 36

(53) 4134

(54) $\frac{3}{110}$

(55) 90

(56) $\frac{5}{12}$

(57) 1017072

(58) 96

(59) 18

***(60) 1916–2116**

(61) 66

(62) 210

(63) 10

(64) 576

(65) -36

(66) 36.00

(67) 216

(68) -9

(69) 20

***(70)877345-969697**

(71) $\frac{1}{19}$

(72) 1777

(73) 1

(74) 169

(75) 288

(76) $6\frac{3}{16}$

(77) 455

(78) 72

(79) $\frac{1}{26}$

***(80) 17572–19420**