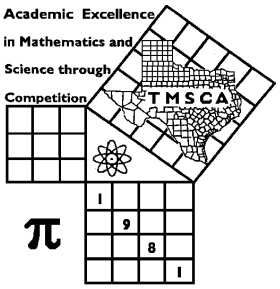
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

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 #8 ©

JANUARY 25, 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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2019-2020 TMSCA Middle School Number Sense Test 8

(1) $456 + 221 - 154 =$ _____

(2) $12 \times 15 + 20 =$ _____

(3) $\frac{7}{9} \times 45 =$ _____

(4) $83\frac{1}{3}\% =$ _____ (fraction)

(5) $21^2 =$ _____

(6) $246813 \div 11$ has a remainder of _____

(7) $32 \div 9 =$ _____ (mixed number)

(8) $55 \div 11 + 15 \times 3 =$ _____

(9) $4836 \div 12 =$ _____

*(10) $842 + 466 + 2388 =$ _____

(11) $61 \times 25 =$ _____

(12) CDXLIV = _____ (Arabic Numeral)

(13) $74 \times 34 =$ _____

(14) The sum of the prime numbers between 20 and 30 is _____

(15) $56 \times 64 =$ _____

(16) The largest prime divisor of 102 is _____

(17) $11 + 13 + 15 + 17 + 19 =$ _____

(18) $45 \times 75 =$ _____

(19) \$1.20 is _____% tax on \$30.00

*(20) $454 \times 211 =$ _____

(21) The multiplicative inverse of 1.4 is _____

(22) $111 \times 108 =$ _____

(23) $\frac{8!}{6!} \times 2! =$ _____

(24) $8\frac{2}{3} \times 9\frac{3}{4} =$ _____ (mixed number)

(25) $234_5 =$ _____ base 10

(26) $0.22555... =$ _____ (fraction)

(27) $18^2 + 54^2 =$ _____

(28) (8 ft)(9 ft)(15 ft) = _____ cubic yards

(29) $7\frac{4}{5} + 3\frac{5}{6} =$ _____ (mixed number)

*(30) $27 \times 34 + 28 \times 33 =$ _____

(31) $286 \times 21 =$ _____

(32) If $4x = 19$, then $16x^2 + 9 =$ _____

(33) $\sqrt{28 \times 63} =$ _____

(34) An octagon has _____ sides

(35) If $n^2 = 144$, then $n^3 =$ _____

(36) How many integers between 14 and 84 are divisible by 7? _____

(37) The 12th triangular number is _____

(38) $A = \{5, 3, 8, 11, m, 30, n, 79\}$. $m + n =$ ____

(39) If $f(x) = 4x^2 - 4x + 1$, then $f(5) =$ _____

*(40) $(5\pi)(5\pi)(5\pi) =$ _____

(41) $57^2 =$ _____

(42) $345_8 + 234_8 =$ _____ 8

(43) $9^3 - 8^3 =$ _____

(44) If $\frac{6}{x} = \frac{30}{65}$, then $x =$ _____

(45) $777 \times \frac{3}{37} =$ _____

(46) If $7^x = 147$, then $7^{(x-1)} =$ _____

(47) 24% of 75 is _____% of 225

(48) If $2x + y = 10$ and $3x - y = 5$, then $y =$ ____

(49) The hypotenuse of a right triangle with integral sides is 41. The perimeter is _____

***(50)** $15 \times 18 \times 21 =$ _____

(51) How many 3-digit numbers are even? _____

(52) $12\frac{1}{4} \times 8\frac{1}{4} =$ _____ (mixed number)

(53) If $5^4 \times 25^6 = 5^x$, then $x =$ _____

(54) The slope of the line $3x + 5y = 12$ is _____

(55) $112201_3 =$ _____$_9$

(56) $5^9 \div 12$ has a remainder of _____

(57) $4 + 10 + 16 + 22 + ... + 46 =$ _____

(58) (3 yd) + (3 ft) + (3 in) = _____ in

(59) $29304 \div 111 =$ _____

***(60)** $18^5 \div 9^3 =$ _____

(61) $\sqrt[4]{\frac{256}{625}} =$ _____

(62) $20^2 - 18^2 + 16^2 - 14^2 =$ _____

(63) The area of a 30-60-90 triangle with hypotenuse = 24 is $k\sqrt{3}$. $k =$ _____

(64) If $18^7 \div 9 = (2)^x (3)^y$, then $x - y =$ _____

(65) How many positive integers less than 84 are relatively prime to 84? _____

(66) $43 \times 1111 =$ _____

(67) $14 \times \frac{17}{13} =$ _____ (mixed number)

(68) $1^3 + 2^3 + 3^3 + ... + 7^3 =$ _____

(69) $0.151515... + 0.181818... =$ _____

***(70)** $\sqrt{1882} \times \sqrt{2468} =$ _____

(71) $(462_7 \div 5_7) =$ _____$_7$

(72) $25 \div 0.41666... =$ _____

(73) $\frac{8}{11} - \frac{23}{34} =$ _____

(74) The first 4 digits of the decimal for $\frac{37}{90}$ is 0._____

(75) The vertex of $y = x^2 - 8x + 23$ is (h, k). $k =$ _____

(76) The sum of the integral solutions of $|4x + 12| < 36$ is _____

(77) If the roots of $x^3 + x^2 - 14x - 24 = 0$ are P, Q and R, then PQR + (P + Q + R) = _____

(78) How many even numbers greater than 1363 and less than 2077 exist? _____

(79) If $x - y = 2$ and $xy = 48$, then $x^3 - y^3 =$ _____

***(80)** How many minutes are in February, 2021? _____

2019-2020 TMSCA MSNS Test 8 Key

(1) 523

(2) 200

(3) 35

(4) $\frac{5}{6}$

(5) 441

(6) 6

(7) $3\frac{5}{9}$

(8) 50

(9) 403

***(10)** $3512-3880$

(11) 1525

(12) 444

(13) 2516

(14) 52

(15) 3584

(16) 17

(17) 75

(18) 3375

(19) 4

***(20)** $91005-100583$

(21) $\frac{5}{7}$

(22) 11988

(23) 112

(24) $84\frac{1}{2}$

(25) 69

(26) $\frac{203}{900}$

(27) 3240

(28) 40

(29) $11\frac{19}{30}$

***(30)** $1750-1934$

(31) 6006

(32) 370

(33) 42

(34) 8

(35) 1728

(36) 9

(37) 78

(38) 68

(39) 81

***(40)** $3682-4069$

(41) 3249

(42) 601

(43) 217

(44) 13

(45) 63

(46) 21

(47) 8

(48) 4

(49) 90

***(50)** $5387-5953$

(51) 450

(52) $101\frac{1}{16}$

(53) 16

(54) $-\frac{3}{5}$ or $-.6$

(55) 481

(56) 5

(57) 200

(58) 147

(59) 264

***(60)** $2463-2721$

(61) $\frac{4}{5}$ or .8

(62) 136

(63) 72

(64) –5

(65) 24

(66) 47773

(67) $18\frac{4}{13}$

(68) 784

(69) $\frac{1}{3}$

***(70)** $2048-2262$

(71) 66

(72) 60

(73) $\frac{19}{374}$

(74) 4111

(75) 7

(76) –51

(77) 23

(78) 357

(79) 296

***(80)** $38304-42336$