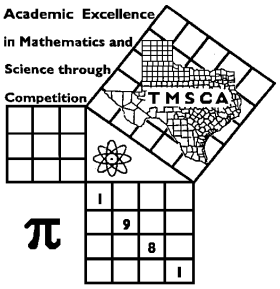
1st Score: _____ Grader: _____	2nd Score: _____ Grader: _____	3rd Score: _____ Grader: _____	**Final Score**

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 #1 ©

OCTOBER 22, 2022

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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2022-2023 TMSCA Middle School Number Sense Test 1

(1) $527 + 473 =$ _____

(2) $2022 - 1013 =$ _____

(3) $88 \times 25 =$ _____

(4) $48 \div 1.6 =$ _____

(5) $\frac{3}{4} =$ _____ %

(6) $(14)^2 =$ _____

(7) $376 \times 11 =$ _____

(8) $0.47 - 0.23 + 0.76 =$ _____

(9) $13 \times 31 + 31 \times 17 = =$ _____

*(10) $544 + 378 + 441 =$ _____

(11) $55 \times 35 =$ _____

(12) $78 \times 72 =$ _____

(13) $4\frac{2}{3} + 5\frac{1}{6} =$ _____ (mixed number)

(14) 70% of 40 plus 12 = _____

(15) $\left(6\right)^3 =$ _____

(16) $26 \times 43 =$ _____

(17) $73 \times 101 =$ _____

(18) $3\frac{3}{7} \times 2\frac{1}{3} =$ _____

(19) $22 + 25 + 28 + 31 + 34 =$ _____

*(20) $388 \times 712 =$ _____

(21) $\frac{1}{6} + \frac{1}{12} + \frac{1}{24} = =$ _____ (fraction)

(22) $96 \times 92 =$ _____

(23) 2 yards + 2 feet = _____ inches

(24) $24^2 - 22^2 =$ _____

(25) $102 \times 103 =$ _____

(26) $2.35 - 1.755 =$ _____ (decimal)

(27) 7 abs cost $28.21. 5 abs cost $_____

(28) $123_5 =$ _____ 10

(29) 7.5% tax on $40.00 is $ _____

*(30) $\sqrt{625671} =$ _____

(31) $\frac{6!}{4!} =$ _____

(32) $0.424242... =$ _____ (fraction)

(33) The largest prime divisor of 84 is _____

(34) 3 gallons = _____ cubic inches

(35) The area of a square with a diagonal of 18 in is _____ in^2

(36) 256 ounces = _____ gallons

(37) $\frac{9}{11} + \frac{11}{9} =$ _____ (mixed number)

(38) How many integers between 6 and 46 are divisible by 4? _____

(39) If $7^x = 98$, then $7^{x-1} =$ _____

*(40) 2.5 miles = _____ feet

(41) $60°\,C =$ _____ °F

(42) $456_8 - 267_8 =$ _____ 8

(43) $(12x+5)^2 = ax^2 + bx + c$. $a+b+c =$ _____

(44) $S = \{7, 2, 9, 11, 20, 31, 51, 82, k, 215...\}$. $k =$ _____

(45) The fourth pentagonal number is _____

(46) There are ___ positive integral divisors of 54.

(47) $333 \times \frac{9}{37} =$ _____

(48) The smaller root of $(3x-1)^2 = \frac{9}{16}$ is _____

(49) $1193 \times 7 + 49 =$ _____

*(50) $38 \times 41 \times 44 =$ _____

(51) $(202)^3 =$ _____

(52) 12 is what percent of 72? _____ %

(53) The slope of a line containing the points $(1, -3)$ and $(-2, 9)$ is _____

(54) $997 \times 992 =$ _____

(55) $4\frac{5}{6} \times 4\frac{1}{6} =$ _____ (mixed number)

(56) $368_9 =$ _____ $_3$

(57) $\frac{6}{11} - \frac{19}{32} =$ _____ (fraction)

(58) $(14 + 27 \times 20) \div 6$ has a remainder of _____

(59) $15 \times \frac{17}{19} =$ _____ (mixed number)

*(60) $\sqrt[3]{85672} =$ _____

(61) If the roots of $3x^2 - 3x - 6 = 0$ are P and Q, then $PQ + (P + Q) =$ _____

(62) The probability of rolling two dice and getting a sum of 7 or 9 is _____

(63) $f(x) = x^2 - 6x + 9$. $f(25) =$ _____

(64) If the vertex of the parabola $y = x^2 - 4x + 7$ is (h, k), then $k =$ _____

(65) If $18^9 \div 6 = \left(2^x\right)\left(3^y\right)$, then $x + y =$ _____

(66) $451_6 \div 5_6 =$ _____ $_6$

(67) $222 \times \frac{5}{27} =$ _____ (mixed number)

(68) If the midpoint of the line segment with endpoints $(-6, 2)$ and $(8, 8)$ is (a, b), then $a + b =$ _____

(69) The first 4 digits of the decimal for $\frac{7}{15}$ are 0._____

*(70) $e^4 \times \pi^4 =$ _____

(71) $(605)^2 =$ _____

(72) The sum of the integral solutions of $|3x + 6| \le 24$ is _____

(73) Find the sum of the reciprocals of the first six triangular numbers. _____

(74) $\left(432_7\right) \times \left(6_7\right) =$ _____ $_7$

(75) The sum of the squares of the roots of $2x^2 - 18x + 40 = 0$ is _____

(76) If $f(x) = \frac{7x-5}{6} - 7$, then $f^{-1}(5) =$ _____

(77) If $x^2 + y^2 = 85$, $x > y > 2$, and both x and y are integers then $x + y =$ _____

(78) If $(3)(13)(37)(k) = 90909$, then $k =$ _____

(79) $3 + 8 + 11 + 19 + 30 + ... + 207 + 335 =$ _____

*(80) $12 \times 24 \times 36 \times 48 =$ _____

2022-2023 TMSCA MSNS Test 1 Key

(1) 1000

(2) 1009

(3) 2200

(4) 30

(5) 75

(6) 196

(7) 4136

(8) 1

(9) 930

***(10)** $1295-1431$

(11) 1925

(12) 5616

(13) $9\frac{5}{6}$

(14) 40

(15) 216

(16) 1118

(17) 7373

(18) 8

(19) 140

***(20)** $262444-290068$

(21) $\frac{7}{24}$

(22) 8832

(23) 96

(24) 92

(25) 10506

(26) .595

(27) 20.15

(28) 38

(29) 3.00

***(30)** $752-830$

(31) 30

(32) $\frac{14}{33}$

(33) 7

(34) 693

(35) 162

(36) 2

(37) $2\frac{4}{99}$

(38) 10

(39) 14

***(40)** $12540-13860$

(41) 140

(42) 167

(43) 289

(44) 133

(45) 22

(46) 8

(47) 81

(48) $\frac{1}{12}$

(49) 8400

***(50)** $65125-71979$

(51) 8242408

(52) $16\frac{2}{3}$ or $\frac{50}{3}$

(53) -4

(54) 989024

(55) $20\frac{5}{36}$

(56) 102022

(57) $-\frac{17}{352}$

(58) 2

(59) $13\frac{8}{19}$

***(60)** $42-46$

(61) -1

(62) $\frac{5}{18}$

(63) 484

(64) 3

(65) 25

(66) 55

(67) $41\frac{1}{9}$

(68) 6

(69) 4666

***(70)** $5053-5584$

(71) 366025

(72) -34

(73) $1\frac{5}{7}$ or $\frac{12}{7}$

(74) 3555

(75) 41

(76) 11

(77) 13

(78) 63

(79) 869

***(80)** $472781-522547$