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#2©

OCTOBER 30, 2021

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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2021-2022 TMSCA Middle School Number Sense Test 2

(1) $1278 - 987 =$ ____________________________

(2) $719 + 2215 =$ ____________________________

(3) $\frac{7}{8} =$ ________________________ % (decimal)

(4) $1745 \div 9$ has a remainder of ______________

(5) $15 \times 36 =$ ________________________________

(6) $14.58 + 6.42 =$ ____________________________

(7) $\frac{2}{3} - \frac{1}{9} =$ _______________________ (fraction)

(8) $52 \times 25 =$ _______________________________

(9) $697 \times 11 =$ ____________________________

*(10) $1875 + 633 + 94 =$ _____________________

(11) $85 \times 65 =$ _______________________________

(12) $0.55 =$ _______________________ (fraction)

(13) $105 \times 107 =$ ____________________________

(14) $324 \times 13 =$ ____________________________

(15) $\frac{13}{40} =$ _________________________ (decimal)

(16) $46 \times 54 =$ _______________________________

(17) $5\frac{3}{4} \times 8\frac{1}{5} =$ _____________ (mixed number)

(18) MDCLXVI = ___________ (Arabic numeral)

(19) How many prime numbers
are there between 20 and 40? ____________

*(20) $124 \times 475 =$ ____________________________

(21) $21 \times 7\frac{1}{7} =$ ______________________________

(22) 86 base 10 = _____________________ base 6

(23) $23^2 =$ __________________________________

(24)If 6 abs cost \$9.60, then 16 abs cost \$_______

(25) $0.5333... =$ ____________________ (fraction)

(26) $32 \times 125 =$ ______________________________

(27) Two numbers have a sum of 21, a product of 90, and a positive difference of ______

(28) $\frac{5}{7} \times \frac{14}{15} =$ ____________________________

(29) $8 \times 23 + 17 \times 8 =$ ________________________

*(30) $\sqrt{682} \times \sqrt{774} =$ ________________________

(31) If $3x + y = 9$ and $4x - y = 5$, then $x + y =$ ___

(32) $95 \times 97 =$ ________________________________

(33) $11^2 + 12^2 =$ _____________________________

(34) $46^2 =$ __________________________________

(35) A nonagon has ____________________ sides.

(36) 36 pints = _______________________ gallons

(37) Which is smaller, $\frac{7}{12}$ or 0.6? ____________

(38) $\sqrt{7225} =$ ______________________________

(39) $1006 \times 1008 =$ __________________________

*(40) $48225 \div 159 =$ _________________________

(41) The distance between
the points $(-4, 6)$ and $(1, -6)$ is __________

(42) $\left(\frac{7}{4}\right)^2 =$ ________________ (mixed number)

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(43) 25 is what percent of 20? ____________ %

(44) The negative reciprocal of 3.8 is ________

(45) $7+11+15+19+23+...+83=$ __________

(46) The sum of the prime divisors of 66 is ____

(47) 72% of 1.333… = ____________ (fraction)

(48) $21^2+63^2=$ ________________________

(49) $31^2-27^2=$ ________________________

*(50) $(28\div4+27+2)^2=$ __________________

(51) $\frac{1}{3}$ of a gallon = ____________ cubic inches

(52) $111\times79=$ __________________________

(53) $\left(2\sqrt{3}\times4\sqrt{3}\right)^2=$ ______________________

(54) If the area of a circle is 121π in^2, then the diameter of the circle is ______ in

(55) $4\frac{2}{3}+3\frac{3}{4}=$ ____________ (mixed number)

(56) $6^{-1}+6^{-2}+6^{-3}=$ ____________________

(57) $27\times202=$ _________________________

(58) If $\frac{1}{4}+\frac{1}{2}=\frac{1}{x}$, then x =__________________

(59) The fifth pentagonal number is __________

*(60) $\pi^3\times e^3=$ __________________________

(61) $\frac{1}{20}+\frac{1}{30}+\frac{1}{42}=$ ______________________

(62) The sum of the 6th and 7th triangular numbers is ______________

(63) The harmonic mean of 4 and 6 is ________

(64) The perimeter of an equilateral triangle with height = $4\sqrt{3}$ is ___________

(65) $\frac{8!}{5!}\times(7)^{-1}=$ ________________________

(66) $3\frac{1}{3}$ is the square root of _______________

(67) If $f(x)=x^2+3$, then $f\left(f(4)\right)=$ _________

(68) If $\sqrt{50}+\sqrt{32}=\sqrt{k}$, then k = ___________

(69) $(102)^3=$ ________________________

*(70) $43072\times0.714285=$ __________________

(71) $143\times63=$ __________________________

(72) The sum of the positive integral divisors of 42 is _______________

(73) If $206_b=134$, then $100_b=$ _____________

(74) $\left(2345_7\times11_7\right)=$ ____________________ $_7$

(75) $\sqrt[3]{19683}=$ __________________________

(76) Two dice are rolled. What are the odds that the sum is greater than 9? ______

(77) If (x, y) is the midpoint of the segment with endpoints $(-2, 6)$ and $(8, -4)$, then $x+y=$ ________

(78) $0.45666...=$ ________________ (fraction)

(79) How many distinct 6-letter arrangements can be made from the letters of the word hopper? ______________

*(80) How many minutes are in the month of January? _______________

2021-2022 TMSCA MSNS Test 2 Key

(1) 291

(2) 2934

(3) 87.5

(4) 8

(5) 540

(6) 21

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

(8) 1300

(9) 7667

*(10) $2472-2732$

(11) 5525

(12) $\frac{11}{20}$

(13) 11235

(14) 4212

(15) .325

(16) 2484

(17) $47\frac{3}{20}$

(18) 1666

(19) 4

*(20) $55955-61845$

(21) 150

(22) 222

(23) 529

(24) 25.60

(25) $\frac{8}{15}$

(26) 4000

(27) 9

(28) $\frac{2}{3}$

(29) 320

*(30) $691-762$

(31) 5

(32) 9215

(33) 265

(34) 2116

(35) 9

(36) $4.5, 4\frac{1}{2}, \frac{9}{2}$

(37) $\frac{7}{12}$

(38) 85

(39) 1014048

*(40) $289-318$

(41) 13

(42) $3\frac{1}{16}$

(43) 125

(44) $-\frac{5}{19}$

(45) 900

(46) 16

(47) $\frac{24}{25}$

(48) 4410

(49) 232

*(50) $1232-1360$

(51) 77

(52) 8769

(53) 576

(54) 22

(55) $8\frac{5}{12}$

(56) $\frac{43}{216}$

(57) 5454

(58) $\frac{4}{3}$ or $1\frac{1}{3}$

(59) 35

*(60) $592-653$

(61) $\frac{3}{28}$

(62) 49

(63) $\frac{24}{5}, 4\frac{4}{5}, 4.8$

(64) 24

(65) 48

(66) $\frac{100}{9}$ or $11\frac{1}{9}$

(67) 364

(68) 162

(69) 1061208

*(70) $29228-32303$

(71) 9009

(72) 96

(73) 64

(74) 26125

(75) 27

(76) $\frac{1}{5}$ or .2

(77) 4

(78) $\frac{137}{300}$

(79) 360

*(80) $42408-46872$