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#3©
NOVEMBER 6, 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 3

(1) $844 - 944 =$ ________________

(2) $612 + 387 =$ ________________

(3) $7.8 - 4.33 =$ ________________ (decimal)

(4) $18 \times \frac{5}{6} =$ ________________

(5) $8(13) + 8(7) + 8(30) =$ ________________

(6) $4254 \div 6 =$ ________________

(7) $24 \times 75 =$ ________________

(8) $22^2 =$ ________________

(9) $\frac{13}{20} =$ ________________ (decimal)

*(10) $1123 + 688 - 349 =$ ________________

(11) $0.425 =$ ________________ (fraction)

(12) $74 \times 34 =$ ________________

(13) $6\frac{2}{5} - 3\frac{7}{10} =$ ____________ (mixed number)

(14) $64 \times 66 =$ ________________

(15) 19 is what percent of 95? ____________ %

(16) The smallest prime number
greater than 53 is ________________

(17) $9 + 16 + 23 + 30 + 37 + 44 =$ ____________

(18) 51 quarts = ________________ gallons

(19) $75 \times 35 =$ ________________

*(20) $326 \times 7.83 =$ ________________

(21) $4\frac{3}{5} \times 4\frac{2}{5} =$ ____________ (mixed number)

(22) $1995 \times 5 + 25 =$ ________________

(23) An angle supplementary
to 67° measures ________________°

(24) 120 mph = ________________ ft/s

(25) $18 \times 81 =$ ________________

(26) $22^2 + 44^2 =$ ________________

(27) (24 in) × (48 in) × (36 in) = ____________ ft^3

(28) $104 \times 116 =$ ________________

(29) 137 base 10 = ________________ base 5

*(30) $717 + 204 \times 318 =$ ________________

(31) The slope of the line $5x + 8y = 11$ is ______

(32) $111 \times 375 =$ ________________

(33) $5^4 =$ ________________

(34) If $3^x = \frac{1}{243}$, then $x =$ ________________

(35) If $42^2 - 38^2 = 8 \times k$, then $k =$ __________

(36) A pentagon has ________ distinct diagonals

(37) $97 \times 104 =$ ________________

(38) $\frac{5}{11}$ of a gallon = ________________ in^3

(39) 0.33888… = ________________ (fraction)

*(40) 77 gallons = ________________ ounces

(41) $8\frac{2}{3} \times 9\frac{3}{4} =$ ____________ (mixed number)

(42) The hypotenuse of a right triangle
with integral sides is 17. The area is ______

(43) $286 \times 28 =$ ______________________________

(44) If $(16)(72) = 18k$, then $k =$ ______________

(45) $\frac{6^2}{(2^4)(5^2)} =$ ____________________ (decimal)

(46) $S = \{0, 3, 8, 15, 24, 35, m, n...\}$. $m + n =$ _____

(47) $15 \times \frac{13}{11} =$ _______________ (mixed number)

(48) $543_6 - 345_6 =$ __________________________$_6$

(49) The number of positive integral divisors of 48 is ________________

*(50) $27 \times 30 \times 33 =$ __________________________

(51) $864_9 =$ _______________________________$_3$

(52) $92^2 =$ __________________________________

(53) The geometric mean of 16 and 36 is _______

(54) $x + y = 24$ and $x - y = 17$. $x^2 - y^2 =$ _______

(55) $\sqrt[3]{2197} =$ ______________________________

(56) $17^2 - 15^2 + 13^2 - 11^2 =$ ___________________

(57) $\frac{8}{11} - \frac{25}{32} =$ _____________________________

(58) $7992 \div 111 =$ ____________________________

(59) The fifth hexagonal number is ___________

*(60) $\pi^4 \times 3.1 =$ ___________________________

(61) If the diagonal of a square is $\sqrt{50}$ in, then the area is ____________ in^2

(62) If the odds of winning are 25%, then the probability of losing is __________

(63) The slope of the perpendicular bisector of a line segment with endpoints $(-10, 6)$ and $(5, -4)$ is _________

(64) If $7^{x+1} = 287$, then $7^x =$ _________________

(65) $763_9 - 412_9 + 88_9 =$ _____________________$_9$

(66) The probability of rolling two dice and getting a sum of 3, 4 or 5 is ___________

(67) $(145)^2 =$ ________________________________

(68) If the roots of $2x^2 - 4x - 30 = 0$ are P and Q, then $PQ + (P + Q) =$ ________

(69) The first 4 digits of the decimal for $\frac{17}{45}$ is 0.__________________

*(70) $\sqrt{502} \times \sqrt{782} =$ _________________________

(71) $42 \div 0.58333... =$ _________________________

(72) The arithmetic sequence $4, 12, 20, 28, ..., 196$ has ____________ terms

(73)The volume of a sphere is 288π. The surface area of the sphere = __________π.

(74) The smallest angle of the hands of a clock at 9:30 is ______________°

(75) $2627 \times 101 =$ ____________________________

(76) 24% of $266\frac{2}{3} =$ ________________________

(77) The simple interest on \$1200.00 at 6% for 3 years is \$____________

(78) How many positive integers less than 42 are relatively prime to 42? _______

(79) $\frac{13}{14} - \frac{14}{13} =$ ______________________________

*(80) 231 gallons = _______________________ in^3

2021-2022 TMSCA Middle School Number Sense Test 3 Key

(1) -100

(2) 999

(3) 3.47

(4) 15

(5) 400

(6) 709

(7) 1800

(8) 484

(9) .65

*(10) $1389-1535$

(11) $\frac{17}{40}$

(12) 2516

(13) $2\frac{7}{10}$

(14) 4224

(15) 20

(16) 59

(17) 159

(18) $\frac{51}{4}, 12\frac{3}{4}, 12.75$

(19) 2625

*(20) $2425-2680$

(21) $20\frac{6}{25}$

(22) 10000

(23) 113

(24) 176

(25) 1458

(26) 2420

(27) 24

(28) 12064

(29) 1022

*(30) $62310-68868$

(31) $-\frac{5}{8}$ or $-.625$

(32) 41625

(33) 625

(34) -5

(35) 40

(36) 5

(37) 10088

(38) 105

(39) $\frac{61}{180}$

*(40) $9364-10348$

(41) $84\frac{1}{2}$

(42) 60

(43) 8008

(44) 64

(45) .09

(46) 111

(47) $17\frac{8}{11}$

(48) 154

(49) 10

*(50) $25394-28066$

(51) 222011

(52) 8464

(53) 24

(54) 408

(55) 13

(56) 112

(57) $-\frac{19}{352}$

(58) 72

(59) 45

*(60) $287-317$

(61) 25

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

(63) $\frac{3}{2}, 1\frac{1}{2}, 1.5$

(64) 41

(65) 450

(66) $\frac{1}{4}$ or .25

(67) 21025

(68) -13

(69) 3777

*(70) $596-657$

(71) 72

(72) 25

(73) 144

(74) 105

(75) 265327

(76) 64

(77) 216.00

(78) 12

(79) $-\frac{27}{182}$

*(80) $50693-56029$