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|--|------------------|------------------|--------------------|
| 1st Score: _____ | 2nd Score: _____ | 3rd Score: _____ | Final Score |
| Grader: _____ | Grader: _____ | Grader: _____ | |
| 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 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.

[illegible]

2021-2022 TMSCA Middle School Number Sense Test 8

(1) $794 + 215 =$ _____

(2) $357 - 258 =$ _____

(3) $72 \times 75 =$ _____

(4) $4956 \div 7 =$ _____

(5) $62.5\% =$ _____ (fraction)

(6) $\frac{7}{8} - \frac{1}{3} =$ _____ (fraction)

(7) $12.5 - 14 =$ _____ (decimal)

(8) $6 + 18 \div 3 + 2 \times 3 =$ _____

(9) $17^2 =$ _____

*(10) $782 + 633 - 212 =$ _____

(11) $16 \times 96 =$ _____

(12) $12^3 =$ _____

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

(14) The sum of the prime numbers greater than 30 but less than 40 is _____

(15) The LCM of 12, 18 and 24 is _____

(16) $96 \times 93 =$ _____

(17) $1325 \div 9$ has a remainder of _____

(18) $46 \times 202 =$ _____

(19) $\frac{6}{11} \div \frac{9}{22} =$ _____

*(20) $367 \times 77 =$ _____

(21) 2 miles = _____ feet

(22) An angle supplementary to 111° measures _____ $^\circ$

(23) If $A = \{1, 2, 5, 6, 7\}$ and $B = \{1, 3, 5, 7\}$, then $A \cap B$ has how many elements? _____

(24) $|4 - 12| + |6 - 14| + 8 =$ _____

(25) $(\sqrt{225})^3 =$ _____

(26) If $6^x = 7\frac{1}{2}$, then $6^{x+1} =$ _____

(27) The multiplicative inverse of 1.5 is _____

(28) $1111_5 =$ _____₁₀

(29) $2222 - 222 + 22 - 2 =$ _____

*(30) $67220 \div 139 =$ _____

(31) If Tom has \$13.75 in quarters, then he has _____ quarters

(32) 26 is what percent of 20? _____%

(33) $82 \times 88 =$ _____

34) 45% of 50 is 15% of _____

(35) $0.7333... =$ _____ (fraction)

(36) The perimeter of a rectangle with a length of 12 is 54. The area = _____

(37) The number of the positive integral divisors of 30 is _____

(38) If $h(x) = x^2 - 10x + 25$, then $h(27) =$ _____

(39) $\frac{5}{11}$ of a gallon = _____ in³

*(40) $\sqrt{234591} =$ _____

(41) $1003 \times 1005 =$ _____

(42) $(8x - 3)^2 = ax^2 + bx + c$. $a + c =$ _____

2021-2022 TMSCA Middle School Number Sense Test 8

- (43) The measure of an exterior angle of a regular hexagon is _____°
- (44) The distance between the points (8, -6) and (3, 6) is _____
- (45) $46 \times 54 + 16 =$ _____
- (46) $334_7 + 245_7 =$ _____₇
- (47) $26^2 + 58^2 =$ _____
- (48) The total surface area of a cube is 384 cm^2 . The volume is _____ cm^3
- (49) $\frac{2}{7} =$ _____ % (mixed number)
- *(50) $36 \times 40 \times 44 =$ _____
- (51) $12\frac{3}{4} \times 4\frac{5}{6} =$ _____ (mixed number)
- (52) $4995 \div 111 =$ _____
- (53) $997 \times 992 =$ _____
- (54) $0.2030303\dots =$ _____ (fraction)
- (55) $36\% \text{ of } 466\frac{2}{3} =$ _____
- (56) $(23 \times 20 + 15) \div 6$ has a remainder of _____
- (57) The hypotenuse of a right triangle with legs of 8 and 15 is _____
- (58) The slope of a line containing the points (-3, 2) and (2, 7) is _____
- (59) $2.3 \times 23 =$ _____
- *(60) $(.444) \times 3488 =$ _____
- (61) If the vertex of the parabola $y = x^2 + 10x + 8$ is (h, k), then k = _____
- (62) $22 \times \frac{25}{27} =$ _____ (mixed number)
- (63) The sixteenth triangular number is _____
- (64) $(303)^3 =$ _____
- (65) The sum of the roots plus the product of the roots of $x^2 + 3x - 28 = 0$ is _____
- (66) 45% of 60 plus 73 = _____
- (67) The first 4 digits of the decimal for $\frac{7}{15}$ is 0. _____
- (68) If $7^{x+2} = 147$, then $7^x =$ _____
- (69) If $28^2 - 32^2 = 40 \times k$, then k = _____
- *(70) 128 gallons = _____ fluid ounces
- (71) $\frac{1}{6} + \frac{1}{12} + \frac{1}{20} =$ _____
- (72) If $f(x) = 3x + 4$, then $f(f(6)) =$ _____
- (73) $24 + 12 + 6 + 3 + 1\frac{1}{2} + \dots =$ _____
- (74) The smallest angle formed by the hands of a clock at 7:50 is _____°
- (75) $\left(\frac{125}{216}\right)^{\frac{2}{3}} =$ _____
- (76) A jar contains marbles: 5 red, 6 blue, 9 green. The probability of drawing a red one is _____%
- (77) $(5)^{-4} =$ _____
- (78) A standard deck of cards is shuffled and one card is drawn. The probability of drawing a red queen is _____
- (79) $429 \times 21 =$ _____
- *(80) $\sqrt{3390} \times \sqrt[3]{3390} =$ _____

2021-2022 TMSCA MSNS Test 8 Key

| | | | |
|--------------------------------------|----------------------|------------------------|-------------------------------|
| (1) 1009 | (22) 69 | (43) 60 | (63) 136 |
| (2) 99 | (23) 3 | (44) 13 | (64) 27818127 |
| (3) 5400 | (24) 24 | (45) 2500 | (65) -31 |
| (4) 708 | (25) 3375 | (46) 612 | (66) 100 |
| (5) $\frac{5}{8}$ | (26) 45 | (47) 4040 | (67) 4666 |
| (6) $\frac{13}{24}$ | (27) $\frac{2}{3}$ | (48) 512 | (68) 3 |
| (7) -1.5 | (28) 156 | (49) $28\frac{4}{7}$ | (69) -6 |
| (8) 18 | (29) 2020 | *(50) 60192-66528 | *(70) 15565-17203 |
| (9) 289 | *(30) 460-507 | (51) $61\frac{5}{8}$ | (71) $\frac{3}{10}$ or .3 |
| *(10) 1143-1263 | (31) 55 | (52) 45 | (72) 70 |
| (11) 1536 | (32) 130 | (53) 989024 | (73) 48 |
| (12) 1728 | (33) 7216 | (54) $\frac{67}{330}$ | (74) 65 |
| (13) $1\frac{9}{20}$ | (34) 150 | (55) 168 | (75) $\frac{25}{36}$ |
| (14) 68 | (35) $\frac{11}{15}$ | (56) 1 | (76) 25 |
| (15) 72 | (36) 180 | (57) 17 | (77) $\frac{1}{625}$ or .0016 |
| (16) 8928 | (37) 8 | (58) 1 | (78) $\frac{1}{26}$ |
| (17) 2 | (38) 484 | (59) 52.9 | (79) 9009 |
| (18) 9292 | (39) 105 | *(60) 1472-1626 | (80) 831-918 |
| (19) $\frac{4}{3}$ or $1\frac{1}{3}$ | *(40) 461-508 | (61) -17 | |
| *(20) 26847-29671 | (41) 1008015 | (62) $20\frac{10}{27}$ | |
| (21) 10560 | (42) 73 | | |