

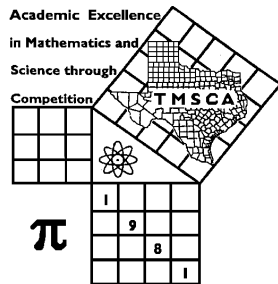
1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	

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 #3 ©

NOVEMBER 2, 2024

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 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.
12. **TEST SHOULD FLIP COMPLETELY OVER FOR PROBLEM #1.**

[illegible]

- (43) If $7x - 5 = 58$, then $x^3 =$ _____
- (44) The slope of the line connecting $(2, -5)$ and $(4, 1)$ is _____
- (45) The sum of the prime divisors of 143 is _____
- (46) $\left(\frac{9}{5}\right)^2 =$ _____ (mixed number)
- (47) If $3^{x+y} = 243$, then $(x + y)^3 =$ _____
- (48) $105 \times 98 =$ _____
- (49) When rolling a pair of dice the probability of getting a sum of 8 is _____
- *(50) $(2e\pi)^3 =$ _____
- (51) The volume of a cube is 1331 in^3 . The surface area of the cube is _____
- (52) The number of 3 person committees that could be formed from a group of 6 people is _____
- (53) The multiplicative inverse of 3.2 is _____
- (54) The measure of an exterior angle of a regular nonagon is _____°.
- (55) $10101 \times 25 =$ _____
- (56) $(4x - 3)(2x + 1) = ax^2 + bx + c$, then $b =$ _____
- (57) $50^\circ \text{ C} =$ _____ $^\circ \text{ F}$
- (58) $7^{-1} + 7^{-2} =$ _____
- (59) $(103)^3 =$ _____
- *(60) $5\pi^4 =$ _____
- (61) The second nonagonal number is _____
- (62) $1007 \times 1008 =$ _____
- (63) The first four digits of the decimal for $\frac{17}{33}$ is 0. _____
- (64) $\left(\frac{25}{49}\right)^{\frac{3}{2}} =$ _____
- (65) If $f(x) = 2x^3 - 7$, then $f(f(1)) =$ _____
- (66) $\frac{13}{11} - \frac{11}{13} =$ _____
- (67) $(125)^2 =$ _____
- (68) If the odds of winning are 25%, then the probability of losing is _____%
- (69) $2024 \times 101 =$ _____
- *(70) $\sqrt{652} \times \sqrt{962} =$ _____
- (71) The smallest angle of the hands of a clock at 8:20 is _____°.
- (72) $\frac{3}{14} =$ _____ % (mixed number)
- (73) $\frac{2}{15} + \frac{2}{35} + \frac{2}{63} =$ _____
- (74) $1^2 - 2^2 + 3^2 - 4^2 + 5^2 =$ _____
- (75) $16 + 12 + 9 + 6\frac{3}{4} + \dots =$ _____
- (76) If $3^{2x} = 256$, $3^x =$ _____
- (77) $30^2 + 31^2 =$ _____
- (78) $48 \times 78 =$ _____
- (79) $48 \times 0.91666 \dots =$ _____
- *(80) 13 miles = _____ feet

2024-2025 TMSCA Middle School Number Sense Test 3

- | | |
|--|--|
| (1) $2023 + 2024 + 2025 =$ _____ | (22) $222 \times 12 =$ _____ |
| (2) $987 \times 5 =$ _____ | (23) $36 \text{ in} \times 72 \text{ in} \times 54 \text{ in} =$ _____ yd^3 |
| (3) $\frac{5}{8} + \frac{1}{2} =$ _____ (mixed number) | (24) The 11 th triangular number is _____ |
| (4) $22\% =$ _____ (fraction) | (25) If 5 burgers cost \$9.95, then 20 burgers would cost \$ _____ |
| (5) $215245 \div 4$ has a remainder of _____ | (26) $2491 = 53 \times$ _____ |
| (6) $14^2 =$ _____ | (27) If the perimeter of a regular nonagon is 126 cm, then one side is _____ cm |
| (7) $\frac{2}{3} - \frac{7}{8} =$ _____ | (28) The simple interest on \$2000 at 4% for 3 years is \$ _____ |
| (8) $16 \times 21 + 16 \times 28 + 16 =$ _____ | (29) The area of a square which has a diagonal of $7\sqrt{2}$ m is _____ m^2 |
| (9) $32 \times 38 =$ _____ | *(30) $\sqrt{2458} =$ _____ |
| *(10) $181 + 463 + 298 =$ _____ | (31) $(15 \times 3 + 15 \times 17) \div 5 =$ _____ |
| (11) 60% of 70 plus 5 = _____ | (32) The additive inverse of -12.1 is _____ |
| (12) $21 \times 2\frac{4}{7} =$ _____ | (33) $\frac{1+3+5+\dots+31}{1+3+5+7} =$ _____ |
| (13) $108 \times 25 =$ _____ | (34) $107 \times 109 =$ _____ |
| (14) $321 \times 111 =$ _____ | (35) The largest two-digit prime is _____ |
| (15) $0.125 =$ _____ (fraction) | (36) $0.2333 \dots =$ _____ (fraction) |
| (16) Which is less? $\frac{3}{8}$ or .37? _____ | (37) The smallest 3-digit palindrome is _____ |
| (17) The LCM of 45 and 75 is _____ | (38) $97 \times 95 =$ _____ |
| (18) 7% of 28 = 14% of _____ | (39) $44^2 + 36^2 =$ _____ |
| (19) $4452 \times 11 =$ _____ | *(40) 350 ft/sec = _____ mph |
| *(20) $23.8 \times 321 =$ _____ | (41) 36 has _____ positive integral divisors |
| (21) $5 \times 1\frac{4}{5} =$ _____ | (42) If $134^2 = 17956$, then $129 \times 139 =$ _____ |

24-25 TMSCA MSNS Test 3 Key

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|---------------------|--|--------------------------------|------------------------|
| (1) 6072 | (22) 2664 | (43) 729 | (62) 1015056 |
| (2) 4935 | (23) 3 | (44) 3 | (63) 5151 |
| (3) $1\frac{1}{8}$ | (24) 66 | (45) 24 | (64) $\frac{125}{343}$ |
| (4) $\frac{11}{50}$ | (25) 39.80 | (46) $3\frac{6}{25}$ | (65) -257 |
| (5) 1 | (26) 47 | (47) 125 | (66) $\frac{48}{143}$ |
| (6) 196 | (27) 14 | (48) 10290 | (67) 15625 |
| (7) $-\frac{5}{24}$ | (28) 240.00 | (49) $\frac{5}{36}$ | (68) 80 |
| (8) 800 | (29) 49 | (50) 4734 - 5231 | (69) 204424 |
| (9) 1216 | (30) 48 - 52 | (51) 726 | (70) 753 - 831 |
| (10) 895 - 989 | (31) 60 | (52) 20 | (71) 130 |
| (11) 47 | (32) 12. 1, $12\frac{1}{10}, \frac{121}{10}$ | (53) $\frac{5}{16}$, or .3125 | (72) $21\frac{3}{7}$ |
| (12) 54 | (33) 16 | (54) 40 | (73) $\frac{2}{9}$ |
| (13) 2700 | (34) 11663 | (55) 252525 | (74) 15 |
| (14) 35631 | (35) 97 | (56) -2 | (75) 64 |
| (15) $\frac{1}{8}$ | (36) $\frac{7}{30}$ | (57) 122 | (76) 16 |
| (16) .37 | (37) 101 | (58) $\frac{8}{49}$ | (77) 1861 |
| (17) 225 | (38) 9215 | (59) 1092727 | (78) 3744 |
| (18) 14 | (39) 3232 | (60) 463 - 511 | (79) 44 |
| (19) 48972 | (40) 227 - 250 | (61) 9 | (80) 65208 - 72072 |
| (20) 7258 - 8021 | (41) 9 | | |
| (21) 9 | (42) 17931 | | |