

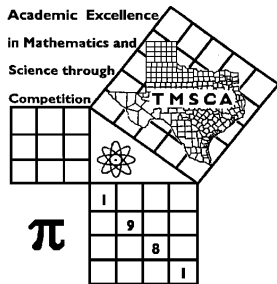
1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	

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 #5 ©

DECEMBER 3, 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.

2022-2023 TMSCA Middle School Number Sense Test 5

- (1) $287 - 297 =$ _____
- (2) $345 + 222 =$ _____
- (3) $21 \times \frac{5}{7} =$ _____
- (4) $3681 \div 9 =$ _____
- (5) $9.05 - 6.56 =$ _____
- (6) $32 \times 75 =$ _____
- (7) $(23)^2 =$ _____
- (8) $\frac{7}{20} =$ _____ (decimal)
- (9) $7(3) + 7(17) + 7(10) =$ _____
- *(10) $1218 + 487 - 247 =$ _____
- (11) $74 \times 76 =$ _____
- (12) 18 is what percent of 72? _____ %
- (13) $64 \times 44 =$ _____
- (14) The smallest prime number greater than 50 is _____
- (15) 51 pints = _____ gallons
- (16) $7\frac{3}{10} - 2\frac{2}{5} =$ _____ (mixed number)
- (17) $85 \times 35 =$ _____
- (18) 0.275 = _____ (fraction)
- (19) $15 + 20 + 25 + 30 + 35 + 40 =$ _____
- *(20) $491 \times 4.15 =$ _____
- (21) An angle supplementary to 67° measures _____ $^\circ$
- (22) 120 mph = _____ ft/s
- (23) $7\frac{4}{5} \times 7\frac{1}{5} =$ _____ (mixed number)
- (24) $105 \times 117 =$ _____
- (25) $2994 \times 6 + 36 =$ _____
- (26) $(21)^2 + (63)^2 =$ _____
- (27) $212 \times 13 =$ _____
- (28) 146 base 10 = _____ base 8
- (29) $(12 \text{ in}) \times (24 \text{ in}) \times (36 \text{ in}) =$ _____ ft^3
- *(30) $111 + 29.2 \times 31.8 =$ _____
- (31) A hexagon has _____ distinct diagonals
- (32) The slope of the line $4x + 12y = 13$ is _____
- (33) If $(33)^2 - (37)^2 = 4 \times k$, then $k =$ _____
- (34) $111 \times 465 =$ _____
- (35) $98 \times 105 =$ _____
- (36) If $4^x = \frac{1}{256}$, then $x =$ _____
- (37) $\sqrt{8 \times 18} =$ _____
- (38) 0.66333... = _____ (fraction)
- (39) If $f(x) = x^2 - 8x + 16$, then $f(21) =$ _____
- *(40) 36 quarts = _____ ounces
- (41) $\frac{(4^4)}{(2^3)(5^3)} =$ _____ (decimal)
- (42) $4\frac{2}{3} \times 6\frac{3}{4} =$ _____ (mixed number)

(43) The hypotenuse of an isosceles right triangle = $12\sqrt{2}$. The area is _____

(44) $S = \{1, 3, 6, 10, 15, 21, 28, m, n, 55, \dots\}$. $n =$ _____

(45) $286 \times 35 =$ _____

(46) $464_8 - 345_8 =$ _____₈

(47) The number of positive integral divisors of 39 is _____

(48) $13 \times \frac{11}{9} =$ _____ (mixed number)

(49) If $(17)(45) = 15k$, then $k =$ _____

*(50) $34 \times 40 \times 46 =$ _____

(51) $(91)^2 =$ _____

(52) $\sqrt[3]{3375} =$ _____

(53) $x + y = 20$ and $x - y = -4$. $x^2 - y^2 =$ _____

(54) $42513 \div 111 =$ _____

(55) One leg of a right triangle = 60 and the hypotenuse = 61. The other leg = _____

(56) $(707)^2 =$ _____

(57) $456_9 =$ _____₃

(58) $18^2 - 15^2 + 12^2 - 9^2 =$ _____

(59) $\frac{5}{8} - \frac{14}{25} =$ _____

*(60) $\pi^5 \times 30.6 =$ _____

(61) If $9^{x+1} = 279$, then $9^x =$ _____

(62) The slope of the perpendicular bisector of a line segment with endpoints (1, 6) and (5, -6) is _____

(63) If the diagonal of a square is $\sqrt{68}$ in, then the area is _____ in²

(64) The probability of rolling two dice and getting a sum of 4, 6 or 8 is _____

(65) If the odds of winning are 35%, then the probability of losing is _____

(66) $(135)^2 =$ _____

(67) If the roots of $8x^2 - 2x - 3 = 0$ are P and Q, then $PQ + (P + Q) =$ _____

(68) The first 4 digits of the decimal for $\frac{29}{45}$ is 0. _____

(69) $663_7 - 332_7 + 44_7 =$ _____₇

*(70) $\sqrt{468} \times \sqrt{684} =$ _____

(71) $\frac{12}{13} - \frac{13}{12} =$ _____

(72) 18% of $366\frac{2}{3} =$ _____

(73) The arithmetic sequence 3, 10, 17, 24, ..., 129 has _____ terms

(74) $2428 \times 101 =$ _____

(75) The surface area of a sphere is 144π . The volume of the sphere = _____ π

(76) $35 \div 0.58333\dots =$ _____

(77) The smallest angle of the hands of a clock at 9:15 is _____ $^\circ$

(78) The sum of the integral solutions of $|4x + 8| \leq 36$ is _____

(79) 12A base 16 = _____ base 10

*(80) 108,000 in³ = _____ gallons

2022-2023 TMSCA Middle School Number Sense Test 5 Key

- | | | | |
|--|------------------------|---------------------------------|---|
| (1) -10 | (22) 176 | (43) 72 | (63) 34 |
| (2) 567 | (23) $56\frac{4}{25}$ | (44) 45 | (64) $\frac{13}{36}$ |
| (3) 15 | (24) 12285 | (45) 10010 | (65) $\frac{20}{27}$ |
| (4) 409 | (25) 18000 | (46) 117 | (66) 18225 |
| (5) 2.49 | (26) 4410 | (47) 4 | (67) $-\frac{1}{8}$ or $-.125$ |
| (6) 2400 | (27) 2756 | (48) $15\frac{8}{9}$ | (68) 6444 |
| (7) 529 | (28) 222 | (49) 51 | (69) 405 |
| (8) .35 | (29) 6 | * (50) 59432-65688 | * (70) 538-594 |
| (9) 210 | * (30) 988-1091 | (51) 8281 | (71) $-\frac{25}{156}$ |
| * (10) 1386-1530 | (31) 9 | (52) 15 | (72) 66 |
| (11) 5624 | (32) $-\frac{1}{3}$ | (53) -80 | (73) 19 |
| (12) 25 | (33) -70 | (54) 383 | (74) 245228 |
| (13) 2816 | (34) 51615 | (55) 11 | (75) 288 |
| (14) 53 | (35) 10290 | (56) 499849 | (76) 60 |
| (15) $\frac{51}{8}, 6\frac{3}{8}, 6.375$ | (36) -4 | (57) 111220 | (77) $172\frac{1}{2}, 172.5, \frac{345}{2}$ |
| (16) $4\frac{9}{10}$ | (37) 12 | (58) 162 | (78) -38 |
| (17) 2975 | (38) $\frac{199}{300}$ | (59) $\frac{13}{200}$ or $.065$ | (79) 298 |
| (18) $\frac{11}{40}$ | (39) 289 | * (60) 8896-9832 | (80) 445-490 |
| (19) 165 | * (40) 1095-1209 | (61) 31 | |
| * (20) 1936-2139 | (41) .256 | (62) $\frac{1}{3}$ | |
| (21) 113 | (42) $31\frac{1}{2}$ | | |