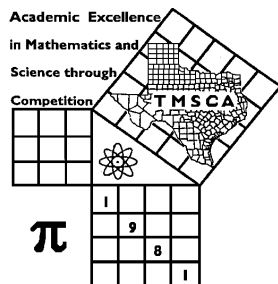


1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	
PLACE LABEL BELOW			
Name: _____ School: _____			
SS/ID Number: _____ City: _____			
Grade: 4 5 6 7 8 Classification: 1A 2A 3A 4A 5A 6A			



TMSCA MIDDLE SCHOOL NUMBER SENSE

TEST #3 ©

NOVEMBER 4, 2023

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]

2023-2024 TMSCA Middle School Number Sense Test 3

(1) $2023 \times 11 =$ _____

(2) $126 - 146 =$ _____

(3) $9114 \div 7 =$ _____

(4) $235\% =$ _____ (decimal)

(5) $43 \times 47 =$ _____

(6) $\frac{4}{11} + \frac{2}{7} =$ _____

(7) $25805 \div 8$ has a remainder of _____

(8) $22 \times 17 + 28 \times 17 =$ _____

(9) $4^3 \div (7 \times 2 + 2) =$ _____

*(10) $2023 - 1592 + 2816 =$ _____

(11) $27 \times 87 =$ _____

(12) $16 + 19 + 22 + 25 + 28 =$ _____

(13) $3\frac{2}{7} + 5\frac{1}{4} =$ _____ (mixed number)

(14) $95 \times 98 =$ _____

(15) $16^2 =$ _____

(16) $20 \div 7 - 2 + 15 \div 7 =$ _____

(17) $\frac{5}{8} \div \frac{15}{16} =$ _____

(18) $DCIX + XLI =$ _____ (Arabic numeral)

(19) $37.5\% \times 88 =$ _____

*(20) $874 \times 835 =$ _____

(21) 28×32 _____

(22) $16 \times 5\frac{3}{16} =$ _____

(23) If $2024 = 45^2 + x$, then $x =$ _____

(24) $6\frac{3}{5} \times 6\frac{2}{5}$ _____ (mixed number)

(25) $\frac{2}{11}$ of a gallon = _____ in³

(26) $81257 \div 11$ has a remainder of _____

(27) $523 \times 101 =$ _____

(28) $18^2 + 54^2 =$ _____

(29) The LCM of 14 and 21 is _____

*(30) $\sqrt{28215} =$ _____

(31) $35^2 - 32^2 =$ _____

(32) A pentagon has _____ diagonals

(33) 12 pounds has _____ oz.

(34) $\frac{11}{17} + \frac{17}{11} =$ _____ (mixed number)

(35) The number of the positive integral divisors of 48 = _____

(36) If Troy has \$8.75 in nickels, then he has _____ nickels.

(37) The area of a trapezoid with bases 11 and 13 and height of 7 is _____

(38) If $x^3 = 125$, then $(x + 4)^2 =$ _____

(39) If $f(x) = 9x^2 + 6x + 1$, then $f(4) =$ _____

*(40) $83\frac{1}{3}\%$ of 95 = _____

(41) $\frac{2}{7} - \frac{5}{8} =$ _____

(42) $98 \times 104 =$ _____

- (43) $1001 \times 82 =$ _____
- (44) The geometric mean of 1, 3 and 9 is _____
- (45) The 8th triangular number is _____
- (46) $6^2 + 42^2 =$ _____
- (47) The product of the LCM and GCF of 25 and 105 is _____
- (48) If $126^2 = 15876$,
then $116 \times 136 =$ _____
- (49) $.3141414\dots =$ _____ (fraction)
- *(50) $3^4 + 4^4 + 5^4 =$ _____
- (51) If $(4x - 3)(12x - 1) = ax^2 + bx + c$,
then $b =$ _____
- (52) $8\frac{1}{4} \times 8\frac{1}{4} =$ _____ (mixed number)
- (53) $53_6 \div 3_6 =$ _____₆
- (54) $315_7 - 26_7 =$ _____₇
- (55) If $(4)^3 \times (8)^2 = 2^k$, then $k =$ _____
- (56) $429 \times \frac{12}{33} =$ _____
- (57) The sum of the 13th and 14th triangular number is _____
- (58) $13653 \div 111 =$ _____
- (59) $(17^3) \div 5$ has a remainder of _____
- *(60) $\pi^3 x e^3 =$ _____
- (61) Two legs of a right triangle are 8 and 15. The hypotenuse is _____
- (62) Round $\sqrt{3}$ to the nearest tenth. _____
- (63) If $63^2 - 37^2 = 13k$, then $k =$ _____
- (64) If a regular polygon has a side length of 6 and an exterior angle of 12° , then its perimeter is _____
- (65) $2 + 4 + 6 + \dots + 34 =$ _____
- (66) If $f(x) = 3x^2 - 2x - 5$, the sum of the roots is _____
- (67) 62.5% of 48 = _____
- (68) The slope of the line passing through (6,2) and having a y-intercept of 5 = _____
- (69) $16 + 8 + 4 + \dots =$ _____
- *(70) $\sqrt{456} \times \sqrt{512} =$ _____
- 71) The discriminant of $7x^2 - 5x - 2 = 0 =$ _____
- (72) The first 4 decimal places of $\frac{739}{900}$ are 0. _____
- (73) The volume of a cylinder with diameter 8 inches and height 14 inches is _____ $\pi \text{ in}^3$
- (74) If $f(x) = \frac{3x+1}{2} + 6$, then $f^{-1}(2) =$ _____
- (75) If an urn contains 4 red marbles and 3 blue marbles, the probability of choosing 2 red marbles without replacement = _____
- (76) If $\sqrt[5]{x+4} - 5 = -3$, then $x =$ _____
- (77) If $10^x = 13$, then $10^{x+4} =$ _____
- (78) If P and Q are the roots of $0 = 3x^2 - 6x + 5$, then $PQ + (P+Q) =$ _____
- (79) How many positive integers less than 60 are relatively prime to 60? _____
- *(80) The diagonal of a square which has an area of $360 \text{ in}^2 =$ _____ in

23-24 TMSCA MSNS Test 3 KEY

(1) 22253	(23) -1	(43) 82082	(64) 180
(2) -20	(24) $42\frac{6}{25}$	(44) 3	(65) 306
(3) 1302	(25) 42	(45) 36	(66) $\frac{2}{3}$
(4) 2.35	(26) 0	(46) 1800	(67) 30
(5) 2021	(27) 52823	(47) 2625	(68) $-\frac{1}{2}$ or $-.5$
(6) $\frac{50}{77}$	(28) 3240	(48) 15776	(69) 32
(7) 5	(29) 42	(49) $\frac{311}{990}$	(70) 460 - 507
(8) 850	*(30) 160 - 176	*(50) 914 - 1010	(71) 81
(9) 4	(31) 201	(51) - 40	(72) 8211
*(10) 3085 - 3409	(32) 5	(52) $68\frac{1}{16}$	(73) 224
(11) 2349	(33) 192	(53) 15	(74) -3
(12) 110	(34) $2\frac{36}{187}$	(54) 256	(75) $\frac{2}{7}$
(13) $8\frac{15}{28}$	(35) 10	(55) 12	(76) 28
(14) 9310	(36) 175	(56) 156	(77) 130000
(15) 256	(37) 84	(57) 196	(78) $3\frac{2}{3}$ or $\frac{11}{3}$
(16) 3	(38) 81	(58) 123	(79) 16
(17) $\frac{2}{3}$	(39) 169	(59) 3	(80) 26 - 28
(18) 650	*(40) 76 - 83	*(60) 592 - 653	
(19) 33	(41) $-\frac{19}{56}$	(61) 17	
*(20) 693301 - 766279	(42) 10192	(62) 1.7	
(21) 896		(63) 200	
(22) 83			