

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 #9 ©

FEBRUARY 1, 2020

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]

2019-2020 TMSCA Middle School Number Sense Test 9

(1) $1972 + 2040 =$ _____

(2) $20 \times 125 =$ _____

(3) $\frac{5}{9} + \frac{2}{3} =$ _____ (mixed number)

(4) $18^2 =$ _____

(5) $536 \times 11 =$ _____

(6) $78214 \div 9$ has a remainder of _____

(7) $25535 \div 5 =$ _____

(8) $0.875 =$ _____ (fraction)

(9) $7(14) + 7(5) + 7(11) =$ _____

*(10) $40 + 493 \times 51 =$ _____

(11) $84 \times 76 =$ _____

(12) 80% of 60 minus 18 = _____

(13) $1996 \times 4 + 16 =$ _____

(14) The smallest prime number greater than 61 is _____

(15) $93 \times 97 =$ _____

(16) The arithmetic mean of 36, 48 and 39 is _____

(17) $\frac{7}{40} =$ _____ %

(18) $11\frac{3}{8} - 2\frac{3}{4} =$ _____ (mixed number)

(19) $LIX + XLI =$ _____ (Arabic Numeral)

*(20) $58 \times 2012 =$ _____

(21) $212 = 14 \times 14 + k$. $k =$ _____

(22) The simple interest on \$500 at a rate of 6% for 3 years is \$ _____

(23) $5.67 \text{ kg} =$ _____ g

(24) The LCM of 25 and 45 is _____

(25) 87 base 10 = _____ base 5

(26) $8 + 13 + 18 + 23 + \dots + 53 =$ _____

(27) $8\frac{1}{3} \times 6\frac{1}{4} =$ _____ (mixed number)

(28) $0.727272\dots =$ _____ (fraction)

(29) $18 \times 3\frac{1}{6} =$ _____

*(30) $\sqrt{604243} =$ _____

(31) Each interior angle of a regular octagon = _____ °

(32) $A = \{1, 4, 9, 16, 25, m, n, 64\}$. $m + n =$ _____

(33) A car travels 28 miles on a gallon of gas. How far can it travel on 15 gallons? _____ mi

(34) If $n^3 = 2197$, then $n^2 + 31 =$ _____

(35) $(3x - 4)^2 = ax^2 + bx + c$. $a + b + c =$ _____

(36) $42^2 =$ _____

(37) If $2x - y = 10$ and $3x + y = 10$, then $y^2 =$ _____

(38) $996^2 =$ _____

(39) The 6th pentagonal number is _____

*(40) $47736 \div 249 =$ _____

(41) $345_7 - 136_7 =$ _____₇

(42) $104^\circ \text{F} =$ _____ °C

- (43) The sum of the prime divisors of 111 is _____
- (44) $47^2 - 53^2 =$ _____
- (45) The distance between the points (3,6) and (9, -2) is _____
- (46) The sum of the solutions to $|3x + 5| = 7$ is _____
- (47) $(18 + 9 \times 7) \div 4$ has a remainder of _____
- (48) $\left(\frac{9}{4}\right)^3 =$ _____ (mixed number)
- (49) If $f(x) = \sqrt{x - 124}$, then $f(800) =$ _____
- *(50) $(17)^4 =$ _____
- (51) $98 \times 107 =$ _____
- (52) $\frac{9!}{6!} \times (6)^{-2} =$ _____
- (53) If $2^{(x+y)} = 32$, then $(x + y)^4 =$ _____
- (54) $6^{-1} + 6^{-2} + 6^{-3} =$ _____
- (55) $\frac{3}{7}$ of a gallon = _____ cubic inches
- (56) The negative reciprocal of 3.2 is _____
- (57) $1008 \times 1006 =$ _____
- (58) $144 \times 12 =$ _____
- (59) If the area of a circle is 576π , then the diameter of the circle is _____
- *(60) The volume of a sphere with radius = 6 is _____
- (61) $19^2 + 38^2 =$ _____
- (62) The set {a,b,c,d,e} has _____ proper subsets
- (63) The sum of the 8th and 9th triangular numbers is _____
- (64) $\frac{11}{30} + \frac{11}{42} + \frac{11}{56} =$ _____
- (65) 90 mi/hr = _____ ft/sec
- (66) The larger root of $(2x - 3)^2 = \frac{4}{9}$ is _____
- (67) The measure of the central of a regular nonagon is _____ °
- (68) $12^3 - 11^3 =$ _____
- (69) If $f(x) = x^2 - 3$, then $f(f(5)) =$ _____
- *(70) $e^4 \times \pi^4 =$ _____
- (71) $(345_6) \times (2_6) =$ _____₆
- (72) $5^{(-3)} =$ _____ (decimal)
- (73) $\frac{8}{11} - \frac{25}{32} =$ _____
- (74) The first 4 digits of the decimal for $\frac{23}{30}$ is 0. _____
- (75) $1 + 1 + 2 + 3 + 5 + 8 + \dots + 34 + 55 =$ _____
- (76) Two dice are rolled. What are the odds that a sum of 9 was rolled? _____
- (77) If x and y are positive integers and if $x^2 + y^2 = 85$, $x > y > 0$, then $x + y =$ _____
- (78) The sum of the positive integral divisors of 48 is _____
- (79) If $f(x) = \frac{3x+10}{8}$, then $f^{-1}(-4) =$ _____
- *(80) $625 \div 833 \times 1460 =$ _____

2019-2020 TMSA MSNS Test 9 Key

(1) 4012	(22) 90.00	(43) 40	(63) 81
(2) 2500	(23) 5670	(44) -600	(64) $\frac{33}{40}$
(3) $1\frac{2}{9}$	(24) 225	(45) 10	(65) 132
(4) 324	(25) 322	(46) $-3\frac{1}{3}$ or $-\frac{10}{3}$	(66) $\frac{11}{6}$ or $1\frac{5}{6}$
(5) 5896	(26) 305	(47) 1	(67) 40
(6) 4	(27) $52\frac{1}{12}$	(48) $11\frac{25}{64}$	(68) 397
(7) 5107	(28) $\frac{8}{11}$	(49) 26	(69) 481
(8) $\frac{7}{8}$	(29) 57	*(50) 79345-87697	*(70) 5053-5584
(9) 210	*(30) 739-816	(51) 10486	(71) 1134
*(10) 23924-26442	(31) 135	(52) 14	(72) .008
(11) 6384	(32) 85	(53) 625	(73) $-\frac{19}{352}$
(12) 30	(33) 420	(54) $\frac{43}{216}$	(74) 7666
(13) 8000	(34) 200	(55) 99	(75) 143
(14) 67	(35) 1	(56) $-\frac{5}{16}$ or $-.3125$	(76) $\frac{1}{8}$ or .125
(15) 9021	(36) 1764	(57) 1014048	(77) 13
(16) 41	(37) 4	(58) 1728	(78) 124
(17) $17.5, 17\frac{1}{2}, \frac{35}{2}$	(38) 992016	(59) 48	(79) -14
(18) $8\frac{5}{8}$	(39) 51	*(60) 860-950	*(80) 1041-1150
(19) 100	*(40) 183-201	(61) 1805	
*(20) 110862-122530	(41) 206	(62) 31	
(21) 16	(42) 40		