

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 # 10 ©

FEBRUARY 6, 2021

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]

2020-2021 TMSCA Middle School Number Sense Test 10

- (1) $673 - 163 =$ _____
- (2) $1005 + 235 =$ _____
- (3) $46\% =$ _____ (fraction)
- (4) $3.7 + 4.36 =$ _____ (decimal)
- (5) $52 \times 75 =$ _____
- (6) $4\frac{1}{4} =$ _____ (decimal)
- (7) $5418 \div 9 =$ _____
- (8) $25 + 40 + 55 =$ _____
- (9) $\frac{8}{15} - \frac{1}{3} =$ _____ (fraction)
- *(10) $828 - 112 + 223 =$ _____
- (11) $27 \div 0.9 =$ _____
- (12) MDCXII = _____ (Arabic numeral)
- (13) 60% of 60 less 24 is _____
- (14) $75^2 =$ _____
- (15) $84 \times 24 =$ _____
- (16) $81 \times 89 =$ _____
- (17) $\frac{3}{8} \div \frac{15}{16} =$ _____ (fraction)
- (18) $13^2 + 31 =$ _____
- (19) The largest prime number less than 58 is _____
- *(20) $623 \times 57 =$ _____
- (21) $95 \times 93 =$ _____
- (22) 1.25 gallons = _____ ounces
- (23) An angle supplementary to 68° measures _____ $^\circ$
- (24) $3872 \times 11 =$ _____
- (25) $|21 - 6| + |3 - 15| =$ _____
- (26) $7\frac{3}{5} \times 7\frac{2}{5} =$ _____ (mixed number)
- (27) The cube root of -64 is _____
- (28) $46 \times 25 =$ _____
- (29) $\frac{14}{11} + \frac{11}{14} =$ _____ (mixed number)
- *(30) $\sqrt{202} \times \sqrt{612} =$ _____
- (31) $211 \times 16 =$ _____
- (32) $\frac{4!}{6!} =$ _____ (fraction)
- (33) If $f(x) = x^2 - 10x + 25$, then $f(23) =$ _____
- 34) If $3^{2x} = 81$, then $x =$ _____
- (35) $\frac{25}{33}$ of a gallon = _____ in³
- (36) $4.5 \times 5.5 =$ _____ (decimal)
- (37) If the area of a square is 144, then the perimeter is _____
- (38) 88 base 10 = _____ base 5
- (39) The number of the positive integral divisors of 30 is _____
- *(40) $\sqrt[3]{87252} =$ _____
- (41) $(7x - 5)^2 = ax^2 + bx + c$. $a + b + c =$ _____
- (42) 35% of 40 + 40% of 35 is _____

- (43) The distance between the points (8,16) and (2, 8) is _____
- (44) The measure of an interior angle of a regular octagon is _____°
- (45) The total surface area of a cube with edge = 8 cm is _____ cm^2
- (46) $23 \times 47 =$ _____
- (47) $992 \times 991 =$ _____
- (48) $\frac{4}{7} \times \frac{3}{5} \times \frac{7}{9} =$ _____ (fraction)
- (49) $154_7 + 453_7 =$ _____₇
- *(50) $52 \times 60 \times 68 =$ _____
- (51) The slope of a line containing the points (-4, 6) and (1, -4) is _____
- (52) How many positive integers less than 60 are relatively prime to 60? _____
- (53) $(29 + 21 \times 11) \div 9$ has a remainder of _____
- (54) The reciprocal of -7.4 is _____
- (55) $5217 \div 111 =$ _____
- (56) $0.369369369\dots =$ _____ (fraction)
- (57) $1004 \times 1012 =$ _____
- (58) $(6x - 4)(5x + 7) = ax^2 + bx + c$. $b =$ _____
- (59) $888\frac{8}{9}\%$ of 9 = _____
- *(60) $\pi^4 \times 6.28 =$ _____
- (61) If $4^{x-2} = 15$, then $4^x =$ _____
- (62) The 24th triangular number is _____
- (63) If the vertex of the parabola $y = x^2 + 6x + 6$ is (h, k), then $h + k =$ _____
- (64) The sum of three consecutive odd integers is 237. The smallest of these is _____
- (65) If $22^2 - 33^2 = 5 \times k$, then $k =$ _____
- (66) The simple interest on \$1200 at a rate of 8% for 6 months is \$ _____
- (67) The area of an isosceles trapezoid with a height of 7 and base lengths of 8 and 12 is _____
- (68) If the probability that Anthony can break 355 on a test is 0.85, then the odds that he does not break 335 are _____
- (69) The first 4 digits of the decimal for $\frac{8}{15}$ is 0. _____
- *(70) $e^5 \times 5.4 =$ _____
- (71) $2^3 + 3^3 + 4^3 + 5^3 + 6^3 =$ _____
- (72) 77 base 8 = _____ base 6
- (73) $13^6 \div 5$ has a remainder of _____
- (74) If $f(x) = \sqrt{x-1} + x^2$, then $f(f(2)) =$ _____
- (75) $16 + 4 + 1 + \frac{1}{4} + \frac{1}{16} + \dots =$ _____
- (76) Two dice are rolled. The probability of getting a sum greater than 8 is _____
- (77) $\frac{2}{15} + \frac{2}{35} + \frac{2}{63} =$ _____ (fraction)
- (78) $27 \times \frac{22}{29} =$ _____
- (79) If $(6)(37)(91)(k) = 181818$, then $k =$ _____
- *(80) $(1 + 2 + 3 + 4 + 5 + \dots + 11)^2 =$ _____

2020-2021 TMSCA MSNS Test 10 Key

(1) 510	(22) 160	(43) 10	(63) −6
(2) 1240	(23) 112	(44) 135	(64) 77
(3) $\frac{23}{50}$	(24) 42592	(45) 384	(65) −121
(4) 8.06	(25) 27	(46) 1081	(66) 48.00
(5) 3900	(26) $56\frac{6}{25}$	(47) 983072	(67) 70
(6) 4.25	(27) −4	(48) $\frac{4}{15}$	(68) $\frac{3}{17}$
(7) 602	(28) 1150	(49) 640	(69) 5333
(8) 120	(29) $2\frac{9}{154}$	*(50) 201552-222768	*(70) 762−841
(9) $\frac{1}{5}$	*(30) 335−369	(51) −2	(71) 440
*(10) 893−985	(31) 3376	(52) 16	(72) 143
(11) 30	(32) $\frac{1}{30}$	(53) 8	(73) 4
(12) 1612	(33) 324	(54) $-\frac{5}{37}$	(74) 27
(13) 12	(34) 2	(55) 47	(75) $\frac{64}{3}$ or $21\frac{1}{3}$
(14) 5625	(35) 175	(56) $\frac{41}{111}$	(76) $\frac{5}{18}$
(15) 2016	(36) 24.75	(57) 1016048	(77) $\frac{2}{9}$
(16) 7209	(37) 48	(58) 22	(78) $20\frac{14}{29}$
(17) $\frac{2}{5}$	(38) 323	(59) 80	(79) 9
(18) 200	(39) 8	*(60) 582−642	*(80) 4139−4573
(19) 53	*(40) 43−46	(61) 240	
*(20) 33736−37286	(41) 4	(62) 300	
(21) 8835	(42) 28		