

1st Score: _____	2nd Score: _____	3rd Score: _____	<b>Final Score</b>
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 #6 ©**

**DECEMBER 5, 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]

**2020-2021 TMSCA Middle School Number Sense Test 6**

- (1)  $562 - 163 =$  \_\_\_\_\_
- (2)  $1094 + 916 =$  \_\_\_\_\_
- (3)  $321 \times 4 =$  \_\_\_\_\_
- (4)  $28\% =$  \_\_\_\_\_ (fraction)
- (5)  $3036 \div 6 =$  \_\_\_\_\_
- (6)  $2\frac{2}{5} =$  \_\_\_\_\_ (decimal)
- (7)  $6.7 - 2.73 =$  \_\_\_\_\_ (decimal)
- (8)  $24^2 =$  \_\_\_\_\_
- (9)  $8 + 12 \times 3 \div 6 =$  \_\_\_\_\_
- \*(10)  $1231 + 566 + 54 =$  \_\_\_\_\_
- (11)  $46 \times 25 =$  \_\_\_\_\_
- (12)  $1\frac{2}{3} + 3\frac{1}{2} =$  \_\_\_\_\_ (mixed number)
- (13)  $888 \div 9$  has a remainder of \_\_\_\_\_
- (14) Which is smaller  $\frac{5}{9}$  or  $\frac{6}{11}$  ? \_\_\_\_\_
- (15) The GCD of 56 and 63 is \_\_\_\_\_
- (16) 15% of 48 is \_\_\_\_\_ (decimal)
- (17)  $46 \times 66 =$  \_\_\_\_\_
- (18)  $11^2 + 3^2 =$  \_\_\_\_\_
- (19)  $4\frac{1}{5} - 2\frac{7}{10} =$  \_\_\_\_\_ (mixed number)
- \*(20)  $98321 \div 496 =$  \_\_\_\_\_
- (21)  $8 + |16 - 9| - |2 - 8| =$  \_\_\_\_\_
- (22) 2 yards + 2 feet = \_\_\_\_\_ inches
- (23)  $2 + 4 + 6 + 8 + \dots + 18 + 20 =$  \_\_\_\_\_
- (24) The sum of the prime numbers between 30 and 40 is \_\_\_\_\_
- (25) 135 base 10 = \_\_\_\_\_ base 5
- (26)  $786 \times 11 =$  \_\_\_\_\_
- (27) 3 quarts = \_\_\_\_\_ ounces
- (28)  $0.151515\dots =$  \_\_\_\_\_ (fraction)
- (29)  $99^2 =$  \_\_\_\_\_
- \*(30)  $2.8 \times 8425 \div 8 =$  \_\_\_\_\_
- (31) If Michelle has \$7.75 in quarters, then she has \_\_\_\_\_ quarters
- (32)  $\sqrt{625} =$  \_\_\_\_\_
- (33)  $36 \times 44 =$  \_\_\_\_\_
- 34) If the perimeter of a square is 48 cm, then the area is \_\_\_\_\_  $\text{cm}^2$
- (35)  $\frac{3!}{5!} =$  \_\_\_\_\_ (fraction)
- (36) A dodecagon has \_\_\_\_\_ sides
- (37) The additive inverse of 0.555... is \_\_\_\_\_
- (38)  $111 \times 107 =$  \_\_\_\_\_
- (39) If  $6x - 2 = 28$ , then  $x^2 =$  \_\_\_\_\_
- \*(40)  $83.3 \times 370 =$  \_\_\_\_\_
- (41)  $14^3 =$  \_\_\_\_\_
- (42) 30% of 90 + 40% of 60 is \_\_\_\_\_

- (43)  $F = \{f, l, o, u, r\}$  and  $B = \{b, l, u, f\}$ .  $F \cap B$  has \_\_\_\_\_ elements
- (44)  $143 \times 91 =$  \_\_\_\_\_
- (45)  $345_8 + 111_8 - 222_8 =$  \_\_\_\_\_<sub>8</sub>
- (46)  $63 \times 33 =$  \_\_\_\_\_
- (47)  $\frac{3}{5} \times \frac{3}{7} \times \frac{7}{9} =$  \_\_\_\_\_ (fraction)
- (48) The measure of an exterior angle of a regular hexagon is \_\_\_\_\_°.
- (49) 18% of  $211\frac{1}{9} =$  \_\_\_\_\_
- \*(50)  $6.28 \times \pi^5 =$  \_\_\_\_\_
- (51) The probability of rolling a die and obtaining a composite number is \_\_\_\_\_
- (52) How many positive integers less than 30 are relatively prime to 30? \_\_\_\_\_
- (53)  $243569 \div 11$  has a remainder of \_\_\_\_\_
- (54) The reciprocal of  $-3.6$  is \_\_\_\_\_
- (55)  $0.4333\ldots =$  \_\_\_\_\_ (fraction)
- (56) 2 pints + 2 cups = \_\_\_\_\_ ounces
- (57) The largest negative integral value of  $x$  such that  $|x + 2| > 6$  is \_\_\_\_\_
- (58)  $8^{-3} + 8^{-1} =$  \_\_\_\_\_
- (59)  $\sqrt[3]{3375} =$  \_\_\_\_\_
- \*(60)  $5.42 \times e^5 =$  \_\_\_\_\_
- (61) The 7<sup>th</sup> pentagonal number is \_\_\_\_\_
- (62) The LCM of 38 and 95 is \_\_\_\_\_
- (63)  $1111 \times 54 =$  \_\_\_\_\_
- (64) The sum of three consecutive integers is 75. The largest of these is \_\_\_\_\_
- (65) The leg opposite the  $30^\circ$  angle in a right triangle = 24. The hypotenuse = \_\_\_\_\_
- (66)  $\left(\frac{9}{25}\right)^{\frac{3}{2}} =$  \_\_\_\_\_ (fraction)
- (67)  $36 \times 35 =$  \_\_\_\_\_
- (68)  $44 \times \frac{47}{50} =$  \_\_\_\_\_ (mixed number)
- (69) If  $145_b = 65$ , then  $111_b =$  \_\_\_\_\_
- \*(70)  $7 \times 14 \times 21 =$  \_\_\_\_\_
- (71) If  $f(x) = 2x^2 - 5$ , then  $f(f(2)) =$  \_\_\_\_\_
- (72) Two dice are rolled. The probability of getting a sum less than 5 is \_\_\_\_\_
- (73)  $(3)(7)(11)(13)(37) =$  \_\_\_\_\_
- (74)  $\frac{7}{12} + \frac{7}{20} + \frac{7}{30} =$  \_\_\_\_\_
- (75) The smallest angle formed by the hands of a clock at 10:45 is \_\_\_\_\_°.
- (76) If  $4^{2x} = 1600$ , then  $4^{x-1} =$  \_\_\_\_\_
- (77)  $2 + 1 + 3 + 4 + 7 + 11 + \ldots + 123 + 199 =$  \_\_\_\_\_
- (78) The first 4 digits of the decimal for  $\frac{25}{333}$  are 0. \_\_\_\_\_
- (79) 66 base 8 is \_\_\_\_\_ base 9
- \*(80) The volume of a square pyramid with each base edge = 13 cm and height = 17 cm is \_\_\_\_\_  $\text{cm}^3$

# 2020-2021 TMSCA MSNS Test 6 Key

(1) 399	(22) 96	(43) 3	(63) 59994
(2) 2010	(23) 110	(44) 13013	(64) 26
(3) 1284	(24) 68	(45) 234	(65) 48
(4) $\frac{7}{25}$	(25) 1020	(46) 2079	(66) $\frac{27}{125}$
(5) 506	(26) 8646	(47) $\frac{1}{5}$	(67) 1260
(6) 2.4	(27) 96	(48) 60	(68) $41\frac{9}{25}$
(7) 3.97	(28) $\frac{5}{33}$	(49) 38	(69) 43
(8) 576	(29) 9801	*(50) 1826–2017	*(70) 1956–2160
(9) 14	*(30) 2802–3096	(51) $\frac{1}{3}$	(71) 13
*(10) 1759–1943	(31) 31	(52) 8	(72) $\frac{1}{6}$
(11) 1150	(32) 25	(53) 7	(73) 111111
(12) $5\frac{1}{6}$	(33) 1584	(54) $-\frac{5}{18}$	(74) $\frac{7}{6}$ or $1\frac{1}{6}$
(13) 6	(34) 144	(55) $\frac{13}{30}$	(75) $52.5, 52\frac{1}{2}, \frac{105}{2}$
(14) $\frac{6}{11}$	(35) $\frac{1}{20}$	(56) 48	(76) 10
(15) 7	(36) 12	(57) –9	(77) 520
(16) 7.2	(37) $-\frac{5}{9}$	(58) $\frac{65}{512}$	(78) 0750
(17) 3036	(38) 11877	(59) 15	(79) 60
(18) 130	(39) 25	*(60) 765–844	*(80) 910–1005
(19) $1\frac{1}{2}$	*(40) 29280–32362	(61) 70	
*(20) 189–208	(41) 2744	(62) 190	
(21) 9	(42) 51		