

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 #11 ©

FEBRUARY 12, 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.

[illegible]

2021-2022 TMSCA Middle School Number Sense Test 11

(1) $9234 + 765 =$ _____

(2) $2022 - 1134 =$ _____

(3) $65 \div 9 =$ _____ (mixed number)

(4) $33 + 36 + 39 =$ _____

(5) $\frac{3}{4} + \frac{5}{8} =$ _____ (mixed number)

(6) $12.2 - 11.8 =$ _____

(7) $0.1666... =$ _____ (fraction)

(8) $13(7) + 8(7) + 9(7) =$ _____

(9) $24 \times 15 =$ _____

*(10) $3246 + 763 + 65 =$ _____

(11) 40% of 90 minus 6 = _____

(12) $3\frac{11}{14} + 5\frac{4}{7} =$ _____ (mixed number)

(13) $91 \times 89 =$ _____

(14) $14852 \div 3$ has a remainder of _____

(15) $53 \times 57 =$ _____

(16) $(15)^3 =$ _____

(17) $DCLX + XL =$ _____ (Arabic Numeral)

(18) $36 \times 76 =$ _____

(19) $6\frac{1}{4} \times 8\frac{1}{3} =$ _____ (mixed number)

*(20) $48663 \div 15.7 =$ _____

(21) $47 \times 25 =$ _____

(22) If Tom has \$6.75 in nickels, then he has _____ nickels.

(23) $25^2 + 75^2 =$ _____

(24) The cube root of -512 is _____

(25) $LCM(20,25) \times GCD(20,25) =$ _____

(26) 3 yards + 3 feet + 6 inches = _____ inches

(27) $\sqrt{169} + \sqrt{729} =$ _____

(28) The set {t,e,x,a,n} has _____ proper subsets

(29) $0.08333... =$ _____ (fraction)

*(30) $\sqrt{61} \times \sqrt{83} \times \sqrt{103} =$ _____

(31) If 7 ads cost \$6.30, then 9 ads cost \$_____

(32) If $6^x = 3$, then $6^{x+3} =$ _____

(33) $0.424242... =$ _____ (fraction)

34) $\frac{2}{3}$ of a gallon = _____ cubic inches

(35) If $f(x) = x^2 + 12x + 36$, then $f(20) =$ _____

(36) If the perimeter of a square is 88 in, then the area = _____ in²

(37) 753 base 8 = _____ base 2

(38) $S = \{2, 5, 10, 17, 26, 37, a, b, 82, \dots\}$. $a + b =$ _____

(39) $505 \times 15 =$ _____

*(40) 288 ft/s = _____ mph

(41) $\frac{37}{40} =$ _____ (decimal)

(42) $(994)^2 =$ _____

- (43) How many integers between 20 and 50 are divisible by 7? _____
- (44) $543_6 - 345_6 =$ _____₆
- (45) $429 \times 77 =$ _____
- (46) The roots of $12x^3 - 17x^2 + 3x + 2 = 0$ are P, Q and R. $(P + Q + R) + (PQR) =$ _____
- (47) The hypotenuse of a triangle with legs of 7 in and 24 in is _____ in
- (48) $64732 \div 11$ has a remainder of _____
- (49) The smaller root of $(2x + 1)^2 = \frac{9}{16}$ is _____
- *(50) $\sqrt{438} \times \sqrt{861} =$ _____
- (51) $(906)^2 =$ _____
- (52) $555 \times 111 =$ _____
- (53) $(19 \times 11 + 30) \div 8$ has a remainder of _____
- (54) The area of an equilateral triangle with a side = 18 cm is _____ $\sqrt{3} \text{ cm}^2$
- (55) $211202_3 =$ _____₉
- (56) If $f(x) = 3x^2 - 3$, then $f(f(2)) =$ _____
- (57) $0.545454... + 0.111... =$ _____
- (58) $95 \times 105 =$ _____
- (59) $11^{-3} + 11^{-1} =$ _____
- *(60) $\pi^6 \times e^6 =$ _____
- (61) $\frac{2}{15} + \frac{2}{35} + \frac{2}{63} =$ _____ (fraction)
- (62) If $24^2 - 20^2 = 8k$, then $k =$ _____
- (63) The sum of the positive integral divisors of 28 is _____
- (64) If $145_b = 101$, then $202_b =$ _____
- (65) $0.2696969... =$ _____ (fraction)
- (66) $29^2 + 29 =$ _____
- (67) $35\frac{5}{7}\% =$ _____ (fraction)
- (68) $21^3 - 20^3 =$ _____
- (69) 27% of $366\frac{2}{3} =$ _____
- *(70) $11 \times 22 \times 33 =$ _____
- (71) The total surface area of 3 by 4 by 5 rectangular prism is _____
- (72) $\frac{1}{8}$ of one mile = _____ feet
- (73) How many distinct 5-letter arrangements can be made from the letters of the word sense? _____
- (74) $(.625)^{-2} =$ _____ (mixed number)
- (75) $14 \times \frac{23}{27} =$ _____ (mixed number)
- (76) If $(6)(7)(k)(37) = 40404$, then $k =$ _____
- (77) If $f(x) = \frac{3x+7}{5} + 6$, then $f^{-1}(20) =$ _____
- (78) The first 4 digits of the decimal for $\frac{11}{15}$ is 0. _____
- (79) The smallest angle formed by the hands of a clock at 1:30 is _____ $^\circ$
- *(80) The volume of a square pyramid with each base edge = 16 cm and height = 22 cm is _____ cm^3

2021-2022 TMSCA MSNS Test 11 Key

(1) 9999	(22) 135	(43) 5	(63) 56
(2) 888	(23) 6250	(44) 154	(64) 130
(3) $7\frac{2}{9}$	(24) -8	(45) 33033	(65) $\frac{89}{330}$
(4) 108	(25) 500	(46) $\frac{5}{4}, 1\frac{1}{4}, 1.25$	(66) 870
(5) $1\frac{3}{8}$	(26) 150	(47) 25	(67) $\frac{5}{14}$
(6) .4 or $\frac{2}{5}$	(27) 40	(48) 8	(68) 1261
(7) $\frac{1}{6}$	(28) 31	(49) $-\frac{7}{8}$ or $-.875$	(69) 99
(8) 210	(29) $\frac{1}{12}$	*(50) 584-644	*(70) 7587-8385
(9) 360	*(30) 687-758	(51) 820836	(71) 94
*(10) 3871-4277	(31) 8.10	(52) 61605	(72) 660
(11) 30	(32) 648	(53) 7	(73) 30
(12) $9\frac{5}{14}$	(33) $\frac{14}{33}$	(54) 81	(74) $2\frac{14}{25}$
(13) 8099	(34) 154	(55) 752	(75) $11\frac{25}{27}$
(14) 2	(35) 676	(56) 240	(76) 26
(15) 3021	(36) 484	(57) $\frac{65}{99}$	(77) 21
(16) 3375	(37) 111101011	(58) 9975	(78) 7333
(17) 700	(38) 115	(59) $\frac{122}{1331}$	(79) 135
(18) 2736	(39) 7575	*(60) 368460-407244	*(80) 1784-1971
(19) $52\frac{1}{12}$	*(40) 187-206	(61) $\frac{2}{9}$	
*(20) 2945-3254	(41) .925	(62) 22	
(21) 1175	(42) 988036		