

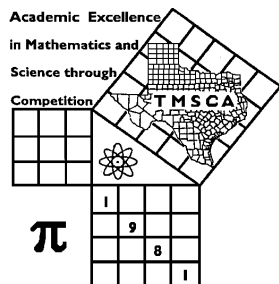
1st Score: _____	2nd Score: _____	3rd Score: _____	Final Score
Grader: _____	Grader: _____	Grader: _____	

PLACE LABEL BELOW

Name: _____ School: _____

SS/ID Number: _____ City: _____

Grade: 5 6 7 8 Classification: 1A 2A 3A 4A 5A 6A



T M S C A M I D D L E S C H O O L`

N U M B E R S E N S E

T E S T #7 ©

J A N U A R Y 1 6 , 2 0 1 6

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.

2015-2016 TMSCA Middle School Number Sense Test #7

- (1) $364 \div 7 =$ _____
- (2) $50 \times 24 =$ _____
- (3) $\frac{3}{16} =$ _____ % (mixed number)
- (4) $2016 \times 16 =$ _____
- (5) $11 \times 10 \times 9 =$ _____
- (6) $0.42 =$ _____ (fraction)
- (7) $7531 \div 6$ has a remainder of _____
- (8) $12 \times 43 =$ _____
- (9) $\frac{7}{9} \times 360 =$ _____
- *(10) $2016 + 2017 + 2018 - 4500 =$ _____
- (11) Which of the following is greater 0.7 or $\frac{11}{15}$? _____
- (12) $14 \times (5^2 - 1 \times 3) \div 2 =$ _____
- (13) $64 \times 45 + 16 \times 45 =$ _____
- (14) 1 gallon + 2 quarts + 1 pint = _____ pints
- (15) $31^2 =$ _____
- (16) $\frac{7}{4} + \frac{4}{5} =$ _____ (improper fraction)
- (17) $113 \times 7 =$ _____
- (18) $48 \times 125 =$ _____
- (19) MMXVI = _____ (Arabic Numeral)
- *(20) $814 \times 889 =$ _____
- (21) $23 \times 2.3 =$ _____
- (22) $35 \times 42 =$ _____
- (23) $2 \text{ ft}^2 =$ _____ in^2
- (24) The LCM of 20 and 24 is _____
- (25) If the area of a rectangle is 42 and the length is 10, then the width is _____
- (26) $91 \div 3 + 17 \div 3 =$ _____
- (27) Find the number of composite numbers that are between 14 and 20. _____
- (28) The perimeter of an equilateral triangle with side length 14.6 cm is _____ cm
- (29) $106 \times 115 =$ _____
- *(30) $117 \times 234 =$ _____
- (31) The sum of the complement and supplement of a 50° angle is _____ $^\circ$
- (32) The number of distinct prime divisors of 28 is _____
- (33) $1 + 3 + 5 + \dots + 25 =$ _____
- (34) $12\frac{1}{5} \times 12\frac{4}{5} =$ _____ (mixed number)
- (35) If Joe invests \$1800 at 6% interest for 4 months, how much interest will Joe earn? \$ _____
- (36) The sum of the positive integral divisors of 15 is _____
- (37) $34 \times 74 =$ _____
- (38) $12^2 + 36^2 =$ _____
- (39) If $f(x) = 3x^2 - 5x + 2$, then $f(4) =$ _____
- *(40) $\sqrt{321875} =$ _____
- (41) If $\frac{9}{6} = \frac{6}{x+2}$, then $x =$ _____
- (42) Find the area of a square with diagonal of 10. _____

- (43) $11 \times \frac{2}{3} =$ _____ (mixed number)
- (44) $\sqrt{1369} =$ _____
- (45) $(1 + 3 + 5 + \dots + 27) - (1 + 3 + 5 + \dots + 19) =$ _____
- (46) If $f(x) = \frac{15}{x^2}$, then $f(5) =$ _____ (fraction)
- (47) $2 + 3 + 4 + \dots + 20 =$ _____
- (48) A regular decagon has an interior angle of measure _____ degrees
- (49) $43_{10} =$ _____₆
- *(50) $18 \times 11 \times 799 =$ _____
- (51) $13 \times \frac{13}{10} =$ _____ (mixed number)
- (52) $18 \times \frac{19}{23} =$ _____ (mixed number)
- (53) How many terms does the sequence 2, 5, 8, 11, ..., 152 have? _____
- (54) $1 = \frac{11}{17} \times$ _____ (mixed number)
- (55) If the area of a circle with circumference $18\pi \text{ cm}^2$ is $k\pi \text{ cm}^2$, then $k =$ _____
- (56) $43_8 - 15_8 =$ _____₈
- (57) $\sqrt[3]{1728} =$ _____
- (58) $(6^4 + 9^4) \div 5$ has a remainder of _____
- (59) A junior high football coach buys 98 sets of shoulder pads at \$92 apiece. How much is the total price? \$ _____
- *(60) The volume of a sphere with radius 5 is _____
- (61) The set {l, e, m, o, n, s} has how many 3-element subsets? _____
- (62) $52^2 + 15^2 =$ _____
- (63) If $3x - 5 > 19$, then the smallest integer solution of x is _____
- (64) If three times a number is the same as the sum of the number and 8, then the number is _____
- (65) $.242424\dots =$ _____ (fraction)
- (66) Find the slope of the line perpendicular to $3x + 5y = -3$. _____
- (67) What is the probability of drawing 2 consecutive hearts from a standard 52-card deck without replacement? _____
- (68) If the y-intercept of $2x + 7y = C$ is 8, then find the x-intercept. _____
- (69) If the hypotenuse of a right triangle with integer sides is 41, then the perimeter is _____
- *(70) $186 \times 331 \times \frac{1}{6} =$ _____
- (71) If P and Q are roots of $2x^2 + bx + 10 = 0$, and $P + Q = 5$, then $b =$ _____
- (72) If $f(x) = 2x^3 + 3$, then $f(4) =$ _____
- (73) Find the probability of rolling a sum of 11 when rolling two 6-sided die. _____
- (74) How many distinct four letter arrangements can be made from {p,a,p,a}? _____
- (75) If $4 \times 5! + 6! = k \times 5!$, then $k =$ _____
- (76) Find the length of a side of a rhombus if the lengths of the two diagonals are 24 and 10. _____
- (77) 20% of 90 is 40% of _____
- (78) 60 mph = _____ feet per second
- (79) If $\log_{16} x = \frac{3}{4}$, then $x =$ _____
- *(80) 2016 yards = _____ inches

2015-2016 TMSCA Middle School Number Sense Key #7

- | | | | |
|-----------------------|------------------------|------------------------|--------------------------------------|
| (1) 52 | (23) 288 | (43) $7\frac{1}{3}$ | (63) 9 |
| (2) 1200 | (24) 120 | (44) 37 | (64) 4 |
| (3) $18\frac{3}{4}$ | (25) 4.2 | (45) 96 | (65) $\frac{8}{33}$ |
| (4) 32256 | (26) 36 | (46) $\frac{3}{5}$ | (66) $\frac{5}{3}$ or $1\frac{2}{3}$ |
| (5) 990 | (27) 3 | (47) 209 | (67) $\frac{1}{17}$ |
| (6) $\frac{21}{50}$ | (28) 43.8 | (48) 144 | (68) 28 |
| (7) 1 | (29) 12190 | (49) 111 | (69) 90 |
| (8) 516 | *(30) 26010 – 28746 | *(50) 150292 – 166112 | *(70) 9748 – 10774 |
| (9) 280 | (31) 170 | (51) $16\frac{9}{10}$ | (71) -10 |
| *(10) 1474 – 1628 | (32) 2 | (52) $14\frac{20}{23}$ | (72) 131 |
| (11) $\frac{11}{15}$ | (33) 169 | (53) 51 | (73) $\frac{1}{18}$ |
| (12) 154 | (34) $156\frac{4}{25}$ | (54) $1\frac{6}{11}$ | (74) 6 |
| (13) 3600 | (35) 36.00 | (55) 81 | (75) 10 |
| (14) 13 | (36) 24 | (56) 26 | (76) 13 |
| (15) 961 | (37) 2516 | (57) 12 | (77) 45 |
| (16) $\frac{51}{20}$ | (38) 1440 | (58) 2 | (78) 88 |
| (17) 791 | (39) 30 | (59) 9016.00 | (79) 8 |
| (18) 6000 | *(40) 539 – 595 | *(60) 498 – 549 | (80) 68948 – 76204 |
| (19) 2016 | (41) 2 | (61) 20 | |
| *(20) 695197 – 768375 | (42) 50 | (62) 2929 | |
| (21) 52.9 | | | |
| (22) 1470 | | | |