

2015-2016 TMSCA Middle School Number Sense Test #5

- (1) $2015 \times 5 =$ _____
- (2) $8 \times 15 =$ _____
- (3) $637 \div 7 =$ _____
- (4) $47 \times 11 =$ _____
- (5) $\frac{9}{11} - \frac{3}{4} =$ _____ (fraction)
- (6) $31.5\% =$ _____ (fraction)
- (7) $11 + 9 + 7 + 5 + 3 + 1 =$ _____
- (8) $(13 + 2) \div 3 + 7^2 =$ _____
- (9) $\frac{3}{5} \times 65 =$ _____
- *(10) $198 + 1987 - 473 =$ _____
- (11) $0.84 =$ _____ (fraction)
- (12) $14 \times 6 \frac{1}{7} =$ _____
- (13) $85 \times 85 =$ _____
- (14) The median of 11, 8, 3, 9, and 15 is _____
- (15) $16^2 =$ _____
- (16) $\frac{1}{2} + \frac{5}{6} =$ _____ (improper fraction)
- (17) $63 \times 43 =$ _____
- (18) $14 \times 33 - 14 \times 13 =$ _____
- (19) CMXC = _____ (Arabic number)
- *(20) $95 \times 199 =$ _____
- (21) $8324 \div 9$ has a remainder of _____
- (22) $73 \times 67 =$ _____
- (23) 25 feet = _____ inches
- (24) The LCM of 16 and 22 is _____
- (25) What is the side length of a square with area 361 ft^2 ? _____ feet
- (26) $47 \div 7 + 13 - 12 \div 7 =$ _____
- (27) How many prime numbers are between 14 and 24? _____
- (28) Find the square of the multiplicative inverse of $\frac{1}{7}$. _____
- (29) $111 \times 84 =$ _____
- *(30) $12^2 + 13^3 =$ _____
- (31) If $9x = 84$, then $x =$ _____ (mixed number)
- (32) Find the sum of the distinct prime divisors of 84. _____
- (33) 11.357 meters = _____ centimeters
- (34) $11 \frac{4}{7} \times 11 \frac{3}{7} =$ _____ (mixed number)
- (35) Find the total cost of a \$21 item with a sales tax rate of 8%? \$ _____
- (36) The perimeter of a quadrilateral with sides 14, 16, 18, and 20 is _____
- (37) $18^2 + 54^2 =$ _____
- (38) The mean of the first five positive even integers is how much greater than the mean of the first five positive odd integers? _____
- (39) If $9 - 7x = 11$, then $x =$ _____
- *(40) $\sqrt{184} \times \sqrt{215} =$ _____

- (41) 18% of 46 is 9% of _____
- (42) $\frac{11}{15} + \frac{15}{11} =$ _____ (mixed number)
- (43) Find the length of a rectangle with perimeter 48 and width 8. _____
- (44) $8^3 =$ _____
- (45) $1 + 2 + 3 + 4 + \dots + 24 =$ _____
- (46) $114_6 =$ _____₁₀
- (47) A set with 4 elements has how many 2-element subsets? _____
- (48) $32^2 - 18^2 =$ _____
- (49) $21_4 + 32_4 =$ _____₄
- *(50) $714 \times 35 =$ _____
- (51) The perimeter of a right triangle with legs of 7 and 24 is _____
- (52) $16 \times \frac{19}{21} =$ _____ (mixed number)
- (53) If $f(x) = x^3 - 3x^2 + 2x + 4$, then $f(4) =$ _____
- (54) If 14 distinct diagonals can be drawn inside a k-sided regular polygon, then $k =$ _____
- (55) If $x(x - 1) < 35$, then the largest possible integer value of x is _____
- (56) $4 + 12 + 20 + 28 + \dots + 76 =$ _____
- (57) $\sqrt{6\frac{1}{4}} =$ _____ (mixed number)
- (58) $(59 + 13 - 2^4) \div 5$ has a remainder of _____
- (59) $2\sqrt{3} \times 5\sqrt{3} =$ _____
- *(60) $\sqrt[3]{8132049} =$ _____
- (61) $0.17777\dots =$ _____ (fraction)
- (62) How many terms are in the sequence 2, 4, 8, 16, ..., 128? _____
- (63) If $73^2 - 27^2 = 100k$, then $k =$ _____
- (64) The measure of the exterior angle of a regular 20-sided polygon is _____ degrees
- (65) If the slope of a the line $Ax + 4y = 18$ is 1.5, then $A =$ _____
- (66) $\frac{1+3+5+7+\dots+29}{1+3+5+7+9} =$ _____
- (67) $13^2 + 39^2 + 13^2 + 26^2 = 13^2 \times$ _____
- (68) If $x = 13$ and $y = 2$, then $x^2 + 2xy + y^2 =$ _____
- (69) Find the largest palindrome less than 150. _____
- *(70) The area of a circle with radius 15 is _____
- (71) If P and Q are roots of $3x^2 - 7x + 5 = 0$, then $PQ - (P + Q) =$ _____
- (72) If $x - y = 12$ and $x + y = 18$, then $x^2 - y^2 =$ _____
- (73) If Joe has 7 ties, 2 pairs of pants, and 3 different shirts, then how many outfits can he make that consist of 1 of each clothing item? _____
- (74) $\frac{1}{30} + \frac{1}{42} + \frac{1}{56} =$ _____ (fraction)
- (75) The number of elements in the intersection of the set of primes less than 10 and the odd integers less than 10 is _____
- (76) $\frac{1}{16}$ of 2016 is _____
- (77) The discriminant of $x^2 - 3x + 7 = 0$ is _____
- (78) If $2x - 3y = 4$ and $x + y = 7$, then $x =$ _____
- (79) $9^{\frac{3}{2}} =$ _____
- *(80) 312 square miles = _____ acres

2015-2016 TMSCA Middle School Number Sense Key #5

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|----------------------|-------------------------|------------------------|-----------------------|
| (1) 10075 | (23) 300 | (41) 92 | (62) 7 |
| (2) 120 | (24) 176 | (42) $2\frac{16}{165}$ | (63) 46 |
| (3) 91 | | | |
| (4) 517 | (25) 19 | (43) 16 | (64) 18 |
| (5) $\frac{3}{44}$ | (26) 18 | (44) 512 | (65) - 6 |
| (6) $\frac{63}{200}$ | (27) 3 | (45) 300 | (66) 9 |
| (7) 36 | (28) 49 | (46) 46 | (67) 15 |
| (8) 54 | (29) 9324 | (47) 6 | (68) 225 |
| (9) 39 | *(30) 2224 - 2458 | (48) 700 | (69) 141 |
| *(10) 1627 - 1797 | (31) $9\frac{1}{3}$ | (49) 113 | *(70) 672 - 742 |
| (11) $\frac{21}{25}$ | | *(50) 23741 - 26239 | |
| (12) 86 | (32) 12 | (51) 56 | (71) $-\frac{2}{3}$ |
| (13) 7225 | (33) 1135.7 | (52) $14\frac{20}{21}$ | (72) 216 |
| (14) 9 | (34) $132\frac{12}{49}$ | (53) 28 | (73) 42 |
| (15) 256 | (35) 22.68 | (54) 7 | (74) $\frac{3}{40}$ |
| (16) $\frac{4}{3}$ | | (55) 6 | |
| (17) 2709 | (36) 68 | (56) 400 | (75) 3 |
| (18) 280 | (37) 3240 | (57) $2\frac{1}{2}$ | (76) 126 |
| (19) 990 | (38) 1 | (58) 1 | (77) -19 |
| *(20) 17960 - 19850 | (39) $-\frac{2}{7}$ | (59) 30 | (78) 5 |
| (21) 8 | | *(60) 192 - 211 | (79) 27 |
| (22) 4891 | *(40) 189 - 208 | (61) $\frac{8}{45}$ | *(80) 189696 - 209664 |