

2015-2016 TMSCA Middle School Number Sense Test #1

- (1) $2014 + 2015 + 2016 =$ _____
- (2) $25 \times 44 =$ _____
- (3) $0.321 =$ _____ % (decimal)
- (4) $4545 \div 9 =$ _____
- (5) $\frac{3}{8} + \frac{7}{8} - \frac{1}{2} =$ _____ (fraction)
- (6) $58 \times 11 =$ _____
- (7) $12 + 14 + 16 + 18 + 20 =$ _____
- (8) $12 \times (2^2 - 1) \div 4 =$ _____
- (9) $\frac{5}{7} \times 56 =$ _____
- * (10) $4302 + 31428 - 2015 =$ _____
- (11) $52\% =$ _____ (fraction)
- (12) $32 \times 12 \frac{1}{2} =$ _____
- (13) $67 \times 63 =$ _____
- (14) The mean of 12, 18, and 30 is _____
- (15) $45^2 =$ _____
- (16) $\frac{4}{7} + \frac{9}{14} =$ _____ (mixed number)
- (17) $38 \times 78 =$ _____
- (18) $19 \times 27 + 8 \times 27 =$ _____
- (19) MCMXLIV = _____ (Arabic number)
- * (20) $216 \times 333 + 4011 =$ _____
- (21) $42 \div 1.5 =$ _____
- (22) $93 \times 96 =$ _____
- (23) 5 pints + 3 cups = _____ cups
- (24) The greatest common factor of 15 and 72 is _____
- (25) The cube root of 729 is _____
- (26) $12 + 41 \div 7 + 22 \div 7 =$ _____
- (27) Find the sum of the prime numbers between 10 and 20. _____
- (28) The multiplicative inverse of $\frac{3}{5}$ is _____ (mixed number)
- (29) $102 \times 107 =$ _____
- * (30) 62.49% of 803 = _____
- (31) The supplement of a 48° angle is _____ $^\circ$
- (32) 63 has how many distinct prime divisors? _____
- (33) 32.71 dekagrams = _____ decigrams
- (34) $7\frac{5}{6} \times 7\frac{1}{6} =$ _____ (mixed number)
- (35) The sale price of a \$45 shirt with a 10% discount is \$ _____
- (36) The number of positive integral divisors of 24 is _____
- (37) $47 \times 12 - 22 \times 12 =$ _____
- (38) $14^2 + 42^2 =$ _____
- (39) If $4x - 7 = 25$, then $x =$ _____
- * (40) $2 \times \pi^5 =$ _____
- (41) 14% of 78 is 39% of _____
- (42) $\frac{7}{13} + \frac{13}{7} =$ _____ (mixed number)

- (43) The area of a rectangle with length 23 and width 17 is _____
- (44) $\sqrt{5329} =$ _____
- (45) $1 + 3 + 5 + \dots + 31 =$ _____
- (46) If $f(x) = \frac{11}{x}$, then $f\left(\frac{1}{9}\right) =$ _____
- (47) The set {a, b, c, d, e} has how many subsets? _____
- (48) The sum of the exterior angles in a pentagon is _____ degrees
- (49) $213_4 =$ _____₁₀
- *(50) $142857 \times 55 =$ _____
- (51) $7\frac{1}{3} \times 14\frac{1}{3} =$ _____ (mixed number)
- (52) $14 \times \frac{14}{17} =$ _____ (mixed number)
- (53) The positive geometric mean between 7 and 28 is _____
- (54) The number of distinct diagonals that can be drawn inside a decagon is _____
- (55) If $2x - 11 > 32$, then the smallest integer solution of x is _____
- (56) $45(\text{base } 7) + 43(\text{base } 7) =$ _____ (base 7)
- (57) $\sqrt{7\frac{1}{9}} =$ _____ (mixed number)
- (58) $(13^8 - 11) \div 7$ has a remainder of _____
- (59) If $\sqrt{48} + \sqrt{12} = \sqrt{x}$, then $x =$ _____
- *(60) $15 \times 17 \times 19 =$ _____
- (61) $11^2 \div 0.090909\dots =$ _____
- (62) $723 \times 111 =$ _____
- (63) If $73^2 - 27^2 = 10k$, then $k =$ _____
- (64) What is the probability of choosing a triangular number from the first 10 counting numbers? _____
- (65) $.090909\dots + .454545\dots =$ _____
- (66) $\frac{1+3+5+7+\dots+23}{1+3+5+7} =$ _____
- (67) $(12^2 + 36^2) - (12^2 + 24^2) =$ _____
- (68) Given $492 \div 4 = 123$, then $492 \div 12 =$ _____
- (69) $53_7 \times 4_7 =$ _____₇
- *(70) $\sqrt{432785} =$ _____
- (71) If P and Q are roots of $3x^2 - 7x + 5 = 0$, then $P + Q =$ _____
- (72) If $f(x) = x^2 + 12x + 36$, then $f(19) =$ _____
- (73) The number of ways to arrange five people in a line is _____
- (74) If 4 a's = 11 b's and 5 b's = 7 c's, then $1a =$ _____ c's
- (75) The sum of the x-intercept and y-intercept of the line $3x - 5y = -30$ is _____
- (76) Find the area of a right triangle with hypotenuse 25 and one leg of 24. _____
- (77) $792 \times 101 =$ _____
- (78) If $7^x = 25$, then $7^{x+2} =$ _____
- (79) If $\log_8 x = \frac{4}{3}$, then $x =$ _____
- *(80) $12345 \div 107 =$ _____

2015-2016 TMSCA Middle School Number Sense Key #1

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|----------------------|-----------------------|-----------------------|---|
| (1) 6045 | (23) 13 | (43) 391 | (62) 80253 |
| (2) 1100 | (24) 3 | (44) 73 | (63) 460 |
| (3) 32.1 | (25) 9 | (45) 256 | (64) .4 or $\frac{2}{5}$ |
| (4) 505 | (26) 21 | (46) 99 | (65) $\frac{6}{11}$ |
| (5) $\frac{3}{4}$ | (27) 60 | (47) 32 | (66) 9 |
| (6) 638 | (28) $1\frac{2}{3}$ | (48) 360 | (67) 720 |
| (7) 80 | (29) 10914 | (49) 39 | (68) 41 |
| (8) 9 | *(30) 477 – 526 | *(50) 7464279–8249991 | (69) 305 |
| (9) 40 | (31) 132 | (51) $105\frac{1}{9}$ | *(70) 625 - 690 |
| *(10) 32030 - 35400 | (32) 2 | (52) $11\frac{9}{17}$ | (71) $\frac{7}{3}$ or $2\frac{1}{3}$ |
| (11) $\frac{13}{25}$ | (33) 3271 | (53) 14 | (72) 625 |
| (12) 400 | (34) $56\frac{5}{36}$ | (54) 35 | (73) 120 |
| (13) 4221 | (35) 40.50 | (55) 22 | (74) $\frac{77}{20}$, $3\frac{17}{20}$, or 3.85 |
| (14) 20 | (36) 8 | (56) 121 | (75) -4 |
| (15) 2025 | (37) 300 | (57) $2\frac{2}{3}$ | (76) 84 |
| (16) $1\frac{3}{14}$ | (38) 1960 | (58) 4 | (77) 79992 |
| (17) 2964 | (39) 8 | (59) 108 | (78) 1225 |
| (18) 729 | *(40) 582 – 642 | *(60) 4603 – 5087 | (79) 16 |
| (19) 1944 | (41) 28 | (61) 1331 | *(80) 110 - 121 |
| *(20) 72143 – 79735 | (42) $2\frac{36}{91}$ | | |