

2016-2017 TMSCA Middle School Number Sense Test #7

- (1) $483 + 387 =$ _____
- (2) $2017 \times 0.5 =$ _____ (decimal)
- (3) $\frac{13}{4} =$ _____ %
- (4) $2017 \div 11$ has a remainder of _____
- (5) $0.45 =$ _____ (fraction)
- (6) 12.12 yards = _____ feet
- (7) $\frac{9}{4} + \frac{3}{8} =$ _____ (improper fraction)
- (8) $4 + 16 \div 8 - 3 \div 1.5 =$ _____
- (9) $1\frac{2}{9} \times 45 =$ _____
- *(10) $4832 - 2480 + 3937 =$ _____
- (11) $16\frac{2}{3}\% =$ _____ (fraction)
- (12) $8 \div 1\frac{1}{3} =$ _____
- (13) $57 \times 25 =$ _____
- (14) $28 \times 32 + 4 =$ _____
- (15) $21^2 =$ _____
- (16) $\frac{9}{4} - \frac{3}{7} =$ _____ (improper fraction)
- (17) $35 \times 82 =$ _____
- (18) $2400 = 24 \times 32 + 24 \times 29 + 24 \times$ _____
- (19) $6 + 8 + 10 + 12 + 14 + 16 + 18 =$ _____
- *(20) $333.333 \times 666.667 =$ _____
- (21) $0.8^3 =$ _____ (decimal)
- (22) $96^2 =$ _____
- (23) $44 \times 0.272727... =$ _____
- (24) The LCM of 14 and 21 is _____
- (25) The square root of 6.25 is _____ (decimal)
- (26) The product of 1.2 and its multiplicative inverse is _____
- (27) Find the product of the two smallest 3-digit prime numbers. _____
- (28) The area of a triangle is 10. The triangle has a base of 5 and a height of _____
- (29) 63 has how many distinct prime divisors? _____
- *(30) $4253127 \div 849 =$ _____
- (31) The area of a rectangle with perimeter 24 and length 7 is _____
- (32) $932 \times 111 =$ _____
- (33) $5 \text{ ft}^2 =$ _____ in^2
- (34) $20\frac{3}{8} \times 20\frac{5}{8} =$ _____ (mixed number)
- (35) If $x^3 = -27$, then $x =$ _____
- (36) 50 has how many positive integral divisors? _____
- (37) $38^2 - 22^2 =$ _____
- (38) $13^2 + 26^2 =$ _____
- (39) $15^2 + 45^2 = 5^2 \times$ _____
- *(40) $539^2 \div 11^2 =$ _____
- (41) $11.5^2 =$ _____ (decimal)
- (42) The area of a square with diagonal $6\sqrt{3} =$ _____
- (43) $2 + 4 + 6 + \dots + 42 =$ _____
- (44) $\frac{10}{7} + \frac{7}{10} =$ _____ (mixed number)

- (45) $\sqrt{7569} =$ _____
- (46) The 15th triangular number is _____
- (47) If $x - y = 32$ and $x + y = 40$, then $x^2 - y^2 =$ _____
- (48) How many more subsets does the set {a,b,c,d,e} have than the set {a,b,c}? _____
- (49) 36 is the nth triangular number, $n =$ _____
- *(50) The side of a square with area 60000 is _____
- (51) Find the sum of the solutions of $|x-5|=3$. _____
- (52) $13 \times \frac{16}{19} =$ _____ (mixed number)
- (53) A regular polygon with a perimeter of 50 and an exterior angle of 36 degrees has a side of _____
- (54) Find the median of a trapezoid with area 52 and height 8. _____
- (55) Find the slope of a line passing through (4, 3) and (8, -6). _____
- (56) $525_6 - 251_6 =$ _____₆
- (57) The sum of the 8th triangular and 9th triangular numbers is _____
- (58) $(4^3 + 7^3 + 11^3) \div 5$ has a remainder of _____
- (59) $39 \times 79 =$ _____
- *(60) $315 \times 1428 =$ _____
- (61) The sum of the infinite geometric series $8 + 4 + 2 + 1 + \dots =$ _____
- (62) $78 \times 333 \frac{1}{3} =$ _____
- (63) $0.454545\dots =$ _____ (fraction)
- (64) If $\frac{a}{b} + \frac{b}{a} = 2\frac{49}{78}$, where a and b are relatively prime, then the larger of a and b is _____
- (65) $\frac{8!}{7!} + \frac{3!}{5!} =$ _____ (mixed number)
- (66) If $f(x)$ is a quadratic with a vertex of (2, 13), then $2f(x - 4) + 7$ has a vertex of (h, k) and $k =$ _____
- (67) The x-intercept of $f(x) = 3x - 6$ is _____
- (68) $10^3 - 5^3 =$ _____
- (69) $151_8 \div 3_8 =$ _____₈
- *(70) The hypotenuse of a right triangle with legs of 60 and 70 is _____
- (71) If P, Q, and R are roots of $9x^3 + x^2 + 10x - 15 = 0$, then $P+Q+R =$ _____
- (72) If $f(x) = 25x + 1$, then $f(6) - f(3) =$ _____
- (73) Find the probability of rolling a different number on each die when rolling two 6-sided die. _____
- (74) $3x - 5y = C$ has a y-intercept of 20. $C =$ _____
- (75) If $6! + 5 \times 5! = k \times 5!$, then $k =$ _____
- (76) A pentagon's interior angle sum is _____
- (77) The probability of getting exactly 2 heads when flipping four fair coins is _____
- (78) If $f(x) = (x^2 + 3x)(x^2 + 2x - 4)$, then $f(x)$ how many real roots? _____
- (79) The sum of the 8th pentagonal number and the 8th triangular number is _____
- *(80) The area of a circle with radius 70 is _____

2016-2017 TMSCA Middle School Number Sense Key #7

- (1) 870
(2) 1008.5
(3) 325
(4) 4
(5) $\frac{9}{20}$
(6) 36.36, $36\frac{9}{25}$, $\frac{909}{25}$
(7) $\frac{21}{8}$
(8) 4
(9) 55
*(10) 5975 – 6603
(11) $\frac{1}{6}$
(12) 6
(13) 1425
(14) 900
(15) 441
(16) $\frac{51}{28}$
(17) 2870
(18) 39
(19) 84
*(20) 211112 – 233333
(21) .512
(22) 9216
(23) 12
(24) 42
(25) 2.5
(26) 1
(27) 10403
(28) 4
(29) 2
*(30) 4760 – 5260
(31) 35
(32) 103452
(33) 720
(34) $420\frac{15}{64}$
(35) – 3
(36) 6
(37) 960
(38) 845
(39) 90
*(40) 2281 – 2521
(41) 132.25
(42) 54
(43) 462
(44) $2\frac{9}{70}$
(45) 87
(46) 120
(47) 1280
(48) 24
(49) 8
*(50) 233 – 257
(51) 10
(52) $10\frac{18}{19}$
(53) 5
(54) $6\frac{1}{2}$, $\frac{13}{2}$, or 6.5
(55) $-2\frac{1}{4}$, $-\frac{9}{4}$ or – 2.25
(56) 234
(57) 81
(58) 3
(59) 3081
*(60) 427329 – 472311
(61) 16
(62) 26000
(63) $\frac{5}{11}$
(64) 13
(65) $8\frac{1}{20}$
(66) 33
(67) 2
(68) 875
(69) 43
*(70) 88 – 96
(71) $-\frac{1}{9}$
(72) 75
(73) $\frac{5}{6}$
(74) – 100
(75) 11
(76) 540
(77) $\frac{3}{8}$ or .375
(78) 4
(79) 128
*(80) 14625 – 16163