

2016-2017 TMSCA Middle School Number Sense Test #4

- (1) $973 - 374 =$ _____
- (2) $28 \times 9 =$ _____
- (3) $184215 \div 3 =$ _____
- (4) $0.45 =$ _____ (fraction)
- (5) $59 \times 11 =$ _____
- (6) $72439 \div 5$ has a remainder of _____
- (7) $18.5\% =$ _____ (fraction)
- (8) $16 \times (5^2 - 3^2) =$ _____
- (9) $\frac{6}{7} \times 49 =$ _____
- *(10) $3241 + 18163 - 537 =$ _____
- (11) $13 \times 15 =$ _____
- (12) 7 cups = _____ ounces
- (13) $23 \times 27 =$ _____
- (14) 9 feet = _____ inches
- (15) $93 \times 33 \frac{1}{3} =$ _____
- (16) $\frac{2}{3} + \frac{11}{12} =$ _____ (improper fraction)
- (17) $35^2 =$ _____
- (18) $162 \times 8 =$ _____
- (19) CXIV = _____ (Arabic Number)
- *(20) $248 \times 1732 =$ _____
- (21) $104 \times 108 =$ _____
- (22) $35 \times 45 =$ _____
- (23) 4 pints + 6 cups = _____ quarts
- (24) The LCM of 15 and 24 is _____
- (25) The sum of the smallest 10 positive even integers is _____
- (26) The largest prime divisor of 287 is _____
- (27) The square root of 961 is _____
- (28) The perimeter of a square with side 2017 is _____
- (29) $237 \times 111 =$ _____
- *(30) $297312 \div 421 =$ _____
- (31) If $8x = 104$, then $x^2 =$ _____
- (32) 63 has how many positive integral divisors? _____
- (33) $32 \times 32 + 16 \times 16 =$ _____
- (34) $62^2 - 48^2 =$ _____
- (35) If $f(x) = 17x - 13$, then $f(6) =$ _____
- (36) $92 \times 94 =$ _____
- (37) $29 \times 89 =$ _____
- (38) If the perimeter of an equilateral triangle is 192, the measure of each side is _____
- (39) 12.7123 grams = _____ milligrams
- *(40) 53% of 4721 = _____
- (41) If $\frac{3}{x-2} = \frac{1}{2}$, then $x =$ _____
- (42) If $2 + 4 + 6 + \dots + 34 = 17k$, then $k =$ _____
- (43) The length of a rectangle with diagonal 13 and width 5 is _____
- (44) $12^3 =$ _____

- (45) $(1 + 3 + 5 + \dots + 27) - (1 + 3 + 5 + \dots + 13) =$ _____
- (46) If $f(x) = \sqrt{x^3}$, then $f(4) =$ _____
- (47) How many proper subsets does $\{t,r,u,m,p,s\}$ contain? _____
- (48) The sum of the measures of the interior angles of a 24-sided polygon is _____ $^\circ$
- (49) $333_4 =$ _____₁₀
- *(50) $\sqrt{432 \times 471} =$ _____
- (51) $4\frac{1}{3} \times 11\frac{1}{3} =$ _____ (mixed number)
- (52) $21 \times \frac{23}{26} =$ _____ (mixed number)
- (53) A set with 9 elements has how many sets with an odd number of elements? _____
- (54) Find the area of a triangle with sides of 11, 60, and 61. _____
- (55) $10^8 \div 11$ has a remainder of _____
- (56) $257_8 =$ _____₁₀
- (57) $32_4 \times 2_4 =$ _____₄
- (58) $\sqrt[3]{\frac{343}{729}} =$ _____ (fraction)
- (59) $\sqrt{5\frac{1}{16}} =$ _____ (mixed number)
- *(60) $99 \times 98 \times 97 =$ _____
- (61) $0.3888\dots =$ _____ (fraction)
- (62) $723 \times 111 =$ _____
- (63) If $2^2 + 4^2 + 6^2 + 8^2 = 2^2(k)$, then $k =$ _____
- (64) $f(x) = 17 - 2x$ has a zero between two integers p and q . $p + q =$ _____
- (65) The slope of a line perpendicular to $3x - 4y = 7$ is _____
- (66) $(32_7)^2 =$ _____₇
- (67) What is the 11th pentagonal number? _____
- (68) If $f(x) = 3x^2 - 17x - 11$ has two zeros p and q , then $p + q =$ _____
- (69) $908^2 =$ _____
- *(70) 900 mph = _____ feet per second
- (71) $5x^2 - 7x - 24 = (ax - p)(bx - q)$, then $abpq =$ _____
- (72) The sum of the 5th triangular and 5th pentagonal numbers is _____
- (73) Find the probability of drawing a heart from a standard deck of 52 cards. _____
- (74) If the product of the roots of $ax^2 + 12x + 18 = 0$ is -4 , then $a =$ _____
- (75) The distance between the roots of $|x + 3| = 5$ is _____
- (76) $2017 \div 9 =$ _____ (mixed number)
- (77) $36^{\frac{3}{2}} =$ _____
- (78) If $4x - 3y = 17$ and $2x + 3y = 13$, then $y =$ _____
- (79) If $127^2 = 16129$, then $123 \times 131 =$ _____
- *(80) $\sqrt[4]{6252853} =$ _____

2016-2017 TMSCA Middle School Number Sense Key #4

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|-----------------------|---------------------------------------|------------------------|--|
| (1) 599 | (23) $\frac{7}{2}, 3\frac{1}{2}, 3.5$ | (45) 147 | (63) 30 |
| (2) 252 | (24) 120 | (46) 8 | (64) 17 |
| (3) 61405 | (25) 110 | (47) 63 | |
| (4) $\frac{9}{20}$ | (26) 41 | | (65) $-\frac{4}{3}$ or $-1\frac{1}{3}$ |
| (5) 649 | (27) 31 | (48) 3960 | (66) 1354 |
| (6) 4 | (28) 8068 | (49) 63 | (67) 176 |
| (7) $\frac{37}{200}$ | (29) 26307 | *(50) 429 – 473 | |
| (8) 256 | *(30) 671 – 741 | (51) $49\frac{1}{9}$ | (68) $\frac{17}{3}, 5\frac{2}{3}$ |
| (9) 42 | (31) 169 | (52) $18\frac{15}{26}$ | (69) 824464 |
| *(10) 19824 – 21910 | (32) 6 | | *(70) 1254 – 1386 |
| (11) 195 | (33) 1280 | (53) 256 | (71) – 120 |
| (12) 56 | (34) 1540 | (54) 330 | (72) 50 |
| (13) 621 | (35) 89 | (55) 1 | |
| (14) 108 | (36) 8648 | (56) 175 | (73) $\frac{1}{4}$ or .25 |
| (15) 3100 | (37) 2581 | (57) 130 | |
| (16) $\frac{19}{12}$ | (38) 64 | (58) $\frac{7}{9}$ | (74) $-\frac{9}{2}, -4\frac{1}{2}, -4.5$ |
| (17) 1225 | (39) 12712.3 | (59) $2\frac{1}{4}$ | (75) 10 |
| (18) 1296 | *(40) 2378 – 2627 | | (76) $224\frac{1}{9}$ |
| (19) 114 | (41) 8 | *(60) 894040 – 988148 | (77) 216 |
| *(20) 408060 – 451012 | (42) 18 | (61) $\frac{7}{18}$ | (78) 1 |
| (21) 11232 | (43) 12 | (62) 80253 | (79) 16113 |
| (22) 1575 | (44) 1728 | | *(80) 48 – 52 |