

2016-2017 TMSCA Middle School Number Sense Test #2

- (1) $2017 \times 6 =$ _____
- (2) $68 \times 50 =$ _____
- (3) $48 \times 11 =$ _____
- (4) $825 \div 11 =$ _____
- (5) $7 \times 92 =$ _____
- (6) $\frac{3}{8} + \frac{5}{8} - \frac{7}{8} =$ _____ (fraction)
- (7) $2835 \div 6$ has a remainder of _____
- (8) $6^2 \div (5 \times 2 - 1) =$ _____
- (9) $\frac{2}{5} \times 75 =$ _____
- *(10) $2017 \times 12 + 8103 =$ _____
- (11) Which is greater 0.8 or $\frac{7}{9}$? _____
- (12) $42 \div 1.5 =$ _____
- (13) $22 \times 82 =$ _____
- (14) The mean of 11, 15, and _____ is 16.
- (15) $21^2 =$ _____
- (16) $\frac{2}{3} + \frac{4}{5} =$ _____ (mixed number)
- (17) $14 \times 96 + 81 \times 96 =$ _____
- (18) $62 \times 111 =$ _____
- (19) What is the smallest number that 8 and 18 divided into with a remainder of 0? _____
- *(20) $9325 + 14 \times 899 =$ _____
- (21) $27 \times 2.7 =$ _____
- (22) $77 \times 83 =$ _____
- (23) $104 \times 103 =$ _____
- (24) $16 \times 3 \frac{1}{16} =$ _____
- (25) The reciprocal of 3.2 is _____ (fraction)
- (26) $48 \div 7 + 29 \div 7 =$ _____
- (27) $1 + 3 + 5 + \dots + 29 =$ _____
- (28) How many prime numbers are between 25 and 40? _____
- (29) $101 \times 963 =$ _____
- *(30) $(261 + 223) \times 599 =$ _____
- (31) One angle of a quadrilateral is 45° . The other three angles each have a measure of _____ $^\circ$.
- (32) 38 has how many positive integral divisors? _____
- (33) $1 + 3 + 5 + \dots + 35 =$ _____
- (34) 57 has how many distinct prime divisors? _____
- (35) What is the sales tax on a \$35 item with an 8% sales tax rate? \$ _____
- (36) The mean of the first 17 even numbers is _____
- (37) If the range of 6, 11, 12, 13, and x is 19, then the sum of the possible values of x is _____
- (38) $32 \times 48 =$ _____
- (39) If $f(x) = x^2 - 6x + 9$, then $f(13) =$ _____
- *(40) $\sqrt{32509} =$ _____
- (41) The vertex angle of an isosceles triangle with base angle 48° is _____ $^\circ$.
- (42) $17 \times \frac{3}{4} =$ _____ (mixed number)
- (43) $2 + 4 + 6 + \dots + 60 =$ _____

- (44) $\frac{15}{7} + \frac{7}{15} =$ _____ (mixed number)
- (45) The perimeter of a regular dodecagon with side 25 is _____
- (46) $15^3 =$ _____
- (47) A regular polygon with an exterior angle of 40° and a side of 22 has a perimeter of _____
- (48) The 20th triangular number is _____
- (49) $134_{11} =$ _____₁₀
- *(50) $667 \times 579 =$ _____
- (51) $12\frac{1}{7} \times 2\frac{1}{7} =$ _____ (mixed number)
- (52) $19 \times \frac{21}{25} =$ _____ (mixed number)
- (53) A set with 25 elements has how many 2-element subsets? _____
- (54) How many distinct diagonals can be drawn inside a 15-sided polygon? _____
- (55) The area of an equilateral triangle with side 8 is $k\sqrt{3}$, then $k =$ _____
- (56) $312_8 - 25_8 =$ _____₈
- (57) If $8! + 9! = k \times 7!$, then $k =$ _____
- (58) $(9^5 + 15^5) \div 8$ has a remainder of _____
- (59) The geometric mean of 18 and 50 is _____
- *(60) $14^2 + 48^2 =$ _____
- (61) $7 + 14 + 21 + \dots + 84 =$ _____
- (62) $(23_9)^2 =$ _____₉
- (63) How many digits are in $2^8 \times 5^6 \times 7^2$? _____
- (64) $96 \times 107 =$ _____
- (65) The sum of the coefficients of $(7x + 3)^4$ is _____
- (66) The side length of a rhombus with diagonals 16 and 12 is _____
- (67) $11^2 + 33^2 + 44^2 = k \times 11^2$. $k =$ _____
- (68) If $x^2 + 9x - 22 = (x + p)(x + q)$, then the greater of p and q is _____
- (69) $12^2 + 84^2 =$ _____
- *(70) Find the surface area of a hexahedron with edge 14. _____
- (71) If a trapezoid has area 64 and height 16, then the median is _____
- (72) When the height of a rectangle with base 12 is increased from 19 to 30, the corresponding increase in area is _____
- (73) $1^3 + 2^3 + 3^3 + \dots + 9^3 =$ _____
- (74) The number of ways to arrange 7 people in a straight line is _____
- (75) If $7! - 3(6!) = k^2 \times 6!$, where $k > 0$, then $k =$ _____
- (76) $\frac{1}{42} + \frac{1}{56} + \frac{1}{72} =$ _____
- (77) $997 \times 994 =$ _____
- (78) If $8^x = 11$, then $8^{x-1} =$ _____
- (79) $803 \times 101 =$ _____
- *(80) 32 miles = _____ yards

2016-2017 TMSCA Middle School Number Sense Key #2

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|----------------------|-----------------------|------------------------|--|
| (1) 12102 | (23) 10712 | (44) $2\frac{64}{105}$ | (63) 9 |
| (2) 3400 | (24) 49 | | (64) 10272 |
| (3) 528 | (25) $\frac{5}{16}$ | (45) 300 | (65) 10000 |
| (4) 75 | (26) 11 | (46) 3375 | |
| (5) 644 | (27) 225 | | (66) 10 |
| (6) $\frac{1}{8}$ | | (47) 198 | (67) 26 |
| (7) 3 | (28) 3 | (48) 210 | |
| (8) 4 | (29) 97263 | (49) 158 | (68) 11 |
| | *(30) 275421 – 304411 | *(50) 366884 – 405502 | (69) 7200 |
| (9) 30 | | (51) $26\frac{1}{49}$ | *(70) 1118 – 1234 |
| *(10) 30692 – 33922 | (31) 105 | | |
| (11) .8 | (32) 4 | (52) $15\frac{24}{25}$ | (71) 4 |
| (12) 28 | (33) 324 | | |
| (13) 1804 | (34) 2 | (53) 300 | (72) 132 |
| (14) 22 | (35) 2.80 | (54) 90 | (73) 2025 |
| (15) 441 | (36) 18 | (55) 16 | (74) 5040 |
| (16) $1\frac{7}{15}$ | (37) 19 | (56) 265 | (75) 2 |
| (17) 9120 | (38) 1536 | (57) 80 | (76) $\frac{1}{18}$ |
| (18) 6882 | (39) 100 | (58) 0 | (77) 991018 |
| | *(40) 172 – 189 | (59) 30 | |
| (19) 72 | | *(60) 2375 – 2625 | (78) $\frac{11}{8}, 1\frac{3}{8}, 1.375$ |
| *(20) 20816 – 23006 | (41) 84 | | (79) 81103 |
| (21) 72.9 | (42) $12\frac{3}{4}$ | (61) 546 | |
| (22) 6391 | (43) 930 | (62) 540 | *(80) 53504 – 59136 |