





## 2016-2017 TMSCA Middle School Number Sense Test #1

- (1)  $252 \div 6 =$  \_\_\_\_\_
- (2)  $30 \times 47 =$  \_\_\_\_\_
- (3)  $\frac{5}{11} =$  \_\_\_\_\_ % (mixed number)
- (4)  $2017 \times 17 =$  \_\_\_\_\_
- (5)  $10 \times 9 \times 8 \div 6 =$  \_\_\_\_\_
- (6)  $0.85 =$  \_\_\_\_\_ (fraction)
- (7)  $234567 \div 3$  has a remainder of \_\_\_\_\_
- (8)  $13 \times 31 =$  \_\_\_\_\_
- (9)  $\frac{8}{9} \times 999 =$  \_\_\_\_\_
- \*(10)  $2016 - 2017 + 2018 + 9137 =$  \_\_\_\_\_
- (11) Which of the following is greater, 0.44 or  $\frac{1}{2}$ ? \_\_\_\_\_
- (12) 3 gallon + 5 quarts = \_\_\_\_\_ quarts
- (13)  $83 \times 17 + 17 \times 17 =$  \_\_\_\_\_
- (14)  $11^2 =$  \_\_\_\_\_
- (15)  $235 \times 50 =$  \_\_\_\_\_
- (16)  $\frac{5}{4} + \frac{4}{5} =$  \_\_\_\_\_ (improper fraction)
- (17)  $35^2 =$  \_\_\_\_\_
- (18)  $63 \times 66\frac{2}{3} =$  \_\_\_\_\_
- (19) How many digits are in  $993^2$ ? \_\_\_\_\_
- \*(20)  $83 \times 8999 =$  \_\_\_\_\_
- (21)  $1.4^2 =$  \_\_\_\_\_
- (22)  $45 \times 62 =$  \_\_\_\_\_
- (23) 5 feet = \_\_\_\_\_ inches
- (24) Find the number of prime numbers that are between 80 and 92. \_\_\_\_\_
- (25) If the base of a rectangle is 7, and the height is four more than the base, then the area is \_\_\_\_\_
- (26) The GCF of 21 and 24 is \_\_\_\_\_
- (27) The perimeter of a regular pentagon with side length 8.6 cm is \_\_\_\_\_ cm
- (28)  $4 \times 11 \div 3 + 13 \div 3 =$  \_\_\_\_\_
- (29)  $114 \times 104 =$  \_\_\_\_\_
- \*(30)  $321 \times 648 =$  \_\_\_\_\_
- (31) The largest angle in a parallelogram that has one angle of  $83^\circ$  is \_\_\_\_\_  $^\circ$
- (32)  $19\frac{3}{7} \times 19\frac{4}{7} =$  \_\_\_\_\_ (mixed number)
- (33)  $2 + 4 + 6 + \dots + 32 =$  \_\_\_\_\_
- (34) 28 has how many positive integral divisors? \_\_\_\_\_
- (35) If Deonte invests \$2000 at 6% interest for two years, how much interest will he earn? \$ \_\_\_\_\_
- (36) The sum of the positive integral divisors of 15 is \_\_\_\_\_
- (37)  $29 \times 89 =$  \_\_\_\_\_
- (38)  $(12^2 + 36^2) + (12^2 + 24^2) =$  \_\_\_\_\_
- (39) If  $f(x) = 2x^2 - 11x + 7$ , then  $f(5) =$  \_\_\_\_\_
- \*(40)  $\sqrt{4399999} =$  \_\_\_\_\_
- (41) If  $\frac{2x+13}{4} = 7$ , then  $x =$  \_\_\_\_\_ (mixed number)
- (42) A square of area 72 has a diagonal length of \_\_\_\_\_

- (43)  $11 \times \frac{2}{3} =$  \_\_\_\_\_ (mixed number)
- (44)  $\sqrt{1369} =$  \_\_\_\_\_
- (45)  $(1 + 3 + 5 + \dots + 27) - (1 + 3 + 5 + \dots + 19) =$  \_\_\_\_\_
- (46) If  $f(x) = \frac{15}{x^2}$ , then  $f(5) =$  \_\_\_\_\_ (fraction)
- (47)  $2 + 3 + 4 + \dots + 20 =$  \_\_\_\_\_
- (48) A regular decagon has an interior angle of measure \_\_\_\_\_ degrees
- (49)  $43_{10} =$  \_\_\_\_\_<sub>6</sub>
- \*(50)  $18 \times 11 \times 799 =$  \_\_\_\_\_
- (51)  $13 \times \frac{13}{10} =$  \_\_\_\_\_ (mixed number)
- (52)  $18 \times \frac{19}{23} =$  \_\_\_\_\_ (mixed number)
- (53) How many terms does the sequence 2, 5, 8, 11, ..., 152 have? \_\_\_\_\_
- (54)  $1 = \frac{11}{17} \times$  \_\_\_\_\_ (mixed number)
- (55) If the area of a circle with circumference  $18\pi \text{ cm}^2$  is  $k\pi \text{ cm}^2$ , then  $k =$  \_\_\_\_\_
- (56)  $43_8 - 15_8 =$  \_\_\_\_\_<sub>8</sub>
- (57)  $\sqrt[3]{1728} =$  \_\_\_\_\_
- (58)  $(6^4 + 9^4) \div 5$  has a remainder of \_\_\_\_\_
- (59) A junior high football coach buys 98 sets of shoulder pads at \$92 each. How much is the total price? \$ \_\_\_\_\_
- \*(60) The volume of a sphere with radius 5 is \_\_\_\_\_
- (61) The set {l, e, m, o, n, s} has how many 3-element subsets? \_\_\_\_\_
- (62)  $52^2 + 15^2 =$  \_\_\_\_\_
- (63) If  $3x - 5 > 19$ , then the smallest integer solution of  $x$  is \_\_\_\_\_
- (64) If three times a number is the same as the sum of the number and 8, then the number is \_\_\_\_\_
- (65)  $.242424\dots =$  \_\_\_\_\_ (fraction)
- (66) Find the slope of the line perpendicular to  $3x + 5y = -3$ . \_\_\_\_\_
- (67) What is the probability of drawing 2 consecutive hearts from a standard 52-card deck without replacement? \_\_\_\_\_
- (68) If the y-intercept of  $2x + 7y = C$  is 8, then find the x-intercept. \_\_\_\_\_
- (69) If the hypotenuse of a right triangle with integer sides is 41, then the perimeter is \_\_\_\_\_
- \*(70)  $186 \times 331 \times \frac{1}{6} =$  \_\_\_\_\_
- (71) If P and Q are roots of  $2x^2 + bx + 10 = 0$ , and  $P + Q = 5$ , then  $b =$  \_\_\_\_\_
- (72) If  $f(x) = 2x^3 + 3$ , then  $f(4) =$  \_\_\_\_\_
- (73) Find the probability of rolling a sum of 11 when rolling two 6-sided die. \_\_\_\_\_
- (74) How many distinct four letter arrangements can be made from {p,a,p,a}? \_\_\_\_\_
- (75) If  $4 \times 5! + 6! = k \times 5!$ , then  $k =$  \_\_\_\_\_
- (76) Find the length of a side of a rhombus if the lengths of the two diagonals are 24 and 10. \_\_\_\_\_
- (77) 20% of 90 is 40% of \_\_\_\_\_
- (78) 60 mph = \_\_\_\_\_ feet per second
- (79) If  $\log_{16} x = \frac{3}{4}$ , then  $x =$  \_\_\_\_\_
- \*(80) 2016 yards = \_\_\_\_\_ inches

## 2016-2017 TMSCA Middle School Number Sense Key #1

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|-----------------------|-------------------------|------------------------|---------------------|
| (1) 42                | (23) 60                 | (43) $7\frac{1}{3}$    | (63) 9              |
| (2) 1410              | (24) 2                  | (44) 37                | (64) 4              |
| (3) $45\frac{5}{11}$  | (25) 77                 | (45) 96                | (65) $\frac{8}{33}$ |
| (4) 34289             | (26) 3                  | (46) $\frac{3}{5}$     | (66) $\frac{5}{3}$  |
| (5) 120               | (27) 43                 | (47) 209               | (67) $\frac{1}{17}$ |
| (6) $\frac{17}{20}$   | (28) 19                 | (48) 144               | (68) 28             |
| (7) 0                 | (29) 11856              | (49) 111               | (69) 90             |
| (8) 403               | *(30) 197608 – 218408   | *(50) 150292 – 166112  | *(70) 9748 – 10774  |
| (9) 888               | (31) 97                 | (51) $16\frac{9}{10}$  | (71) – 10           |
| *(10) 10597 – 11711   | (32) $380\frac{12}{49}$ | (52) $14\frac{20}{23}$ | (72) 131            |
| (11) $\frac{1}{2}$    | (33) 272                | (53) 51                | (73) $\frac{1}{18}$ |
| (12) 17               | (34) 6                  | (54) $1\frac{6}{11}$   | (74) 6              |
| (13) 1700             | (35) 240.00             | (55) 81                | (75) 10             |
| (14) 121              | (36) 24                 | (56) 26                | (76) 13             |
| (15) 11750            | (37) 2581               | (57) 12                | (77) 45             |
| (16) $\frac{41}{20}$  | (38) 2160               | (58) 2                 | (78) 88             |
| (17) 1225             | (39) 2                  | (59) 9016.00           | (79) 8              |
| (18) 4200             | *(40) 1993 – 2202       | *(60) 498 – 549        | *(80) 68948 – 76204 |
| (19) 6                | (41) $7\frac{1}{2}$     | (61) 20                |                     |
| *(20) 709572 – 784262 | (42) 12                 | (62) 2929              |                     |