

## Number Sense Exam 001, 11/23/2016

- (1)  $\frac{3}{4} + \frac{2}{3} =$  \_\_\_\_\_ (improper fraction)
- (2)  $25 \times 215 =$  \_\_\_\_\_
- (3)  $.075 =$  \_\_\_\_\_ (fraction)
- (4)  $(24 + 18) \div 12 \times (3 - 6) =$  \_\_\_\_\_
- (5)  $7.5\% =$  \_\_\_\_\_ proper fraction
- (6)  $263 \div 5 =$  \_\_\_\_\_ (decimal)
- (7)  $28 \div 11 + 82 \div 11 =$  \_\_\_\_\_
- (8) XLII = \_\_\_\_\_ (Arabic Numeral)
- (9)  $\frac{2}{7} + 2\frac{1}{8} =$  \_\_\_\_\_ (mixed number)
- \*(10)  $13 + 159 + 347 + 891 - 10 =$  \_\_\_\_\_
- (11)  $13 + 18 + 23 + 28 + 33 + 38 =$  \_\_\_\_\_
- (12) MMVIII - MIV = \_\_\_\_\_ (Arabic Numeral)
- (13)  $12 \times 17 =$  \_\_\_\_\_
- (14) 280 plus 30% of 320 is \_\_\_\_\_
- (15)  $34^2 =$  \_\_\_\_\_
- (16) Which is smaller,  $1\frac{1}{3}$  or 1.3 ? \_\_\_\_\_
- (17)  $15 \times \frac{15}{17} =$  \_\_\_\_\_ (mixed number)
- (18)  $9 + 10 \times 11 - 12 =$  \_\_\_\_\_
- (19)  $23 + 28 + 33 + 38 + 43 + 48 =$  \_\_\_\_\_
- \*(20)  $(60 \div 3 \div 2 \times 3)^2 =$  \_\_\_\_\_
- (21)  $6\frac{6}{13} \times 4\frac{1}{3} =$  \_\_\_\_\_
- (22)  $\{s, l, o, p, e\} \cap \{l, i, n, e\}$  has \_\_\_\_ distinct elements
- (23) Find the area of a square whose diagonal is 8in. .  
sq. inches
- (24) 6 pints is what percent of a gallon? \_\_\_\_\_ %
- (25) Find the simple interest on \$500.00 at 5% for five years. \$ \_\_\_\_\_
- (26) Which of the following is a triangular number: 9, 15, or 18? \_\_\_\_\_
- (27)  $1421 \div 9 =$  \_\_\_\_\_ (mixed number)
- (28)  $(4)^{-1} + (4)^{-2} =$  \_\_\_\_\_
- (29)  $7.777\dots - 3.333\dots =$  \_\_\_\_\_
- \*(30)  $8\pi^3$  \_\_\_\_\_
- (31) If  $x + 3y = 5$  and  $x - 2y = 4$  then  $y =$  \_\_\_\_\_
- (32) If  $a = 5$  and  $b = 3$ , then  $(a - b)(a^2 + ab + b^2) =$  \_
- (33) Find the simple interest on \$800 at 9% for two years. \$ \_\_\_\_\_
- (34) If  $x$  is to 3 as 5 is to 12 then  $x =$  \_\_\_\_\_
- (35) How many positive integers less than 30 are relatively prime to 30? \_\_\_\_\_
- (36)  $15\frac{1}{5} \times 5\frac{1}{5} =$  \_\_\_\_\_
- (37)  $|6 - |-3 - 6|| =$  \_\_\_\_\_
- (38)  $5\frac{1}{4} \times 5\frac{3}{4} =$  \_\_\_\_\_ (mixed number)
- (39)  $14443 \times 15 =$  \_\_\_\_\_
- \*(40)  $\sqrt{20164} =$  \_\_\_\_\_
- (41)  $31 \times 4! + 36 \times 3! =$  \_\_\_\_\_
- (42) The cube root of 250,047 is \_\_\_\_\_
- (43) The area of the triangle whose base is 6 times its height  $h$  is  $kh^2$  and  $k =$  \_\_\_\_\_
- (44) For hat value of  $k$  does  $x^2 - 3x + k = 0$  have equal roots? \_\_\_\_\_

- (45)  $\frac{3}{14} =$  \_\_\_\_\_ %
- (46)  $13 \times 15 + 1 =$  \_\_\_\_\_
- (47)  $96 \times 97 =$  \_\_\_\_\_
- (48)  $45 \times 95 =$  \_\_\_\_\_
- (49) The measure of an exterior angle of a regular  $n$ -gon is  $18^\circ$ .  $n =$  \_\_\_\_\_ sides
- \*(50)  $29 \times 16 \times 18 =$  \_\_\_\_\_
- (51)  $12 + 9 + 6.75 + \dots =$  \_\_\_\_\_
- (52)  $102 \times 109 =$  \_\_\_\_\_
- (53) The vertex of the parabola  $y = x^2 + 8x$  is  $(h, k)$ . Find  $h$ . \_\_\_\_\_
- (54) If  $y$  varies inversely with  $x$  and  $x = 4$  when  $y = 3$ , find  $x$  when  $y = 8$ . \_\_\_\_\_
- (55) The reciprocal of  $3 - 4i$  is  $a + bi$  and  $a =$  \_\_\_\_\_
- (56) How many ways can 5 people be seated 3 at a time in 3 chairs in a row? \_\_\_\_\_
- (57) The sum of the roots of  $2x^3 - 4x^2 + 5x + 6 = 0$  is \_\_\_\_\_
- (58) A triangle has integral sides of  $x$ , 22, and  $2x$ . The smallest value of  $x$  is \_\_\_\_\_
- (59) .375 of a mile = \_\_\_\_\_ feet
- \*(60)  $16 \times 18 \times 20 =$  \_\_\_\_\_
- (61)  $\sin\left(\frac{13\pi}{6}\right) =$  \_\_\_\_\_
- (62)  $\sqrt{444889}$  \_\_\_\_\_
- (63)  $\tan\left(\frac{\pi}{3}\right) =$  \_\_\_\_\_
- (64) How many lines are determined by 5 points no 3 of which are collinear? \_\_\_\_\_
- (65)  $1^2 - 2^2 + 3^2 - 4^2 + \dots - 10^2 =$  \_\_\_\_\_
- (66) If  $f(x) = 3x - \log_2 x$ , find  $f(4)$  \_\_\_\_\_
- (67)  $\ln(e^2)$  \_\_\_\_\_
- (68) The greatest integer function  $f(x) = [x]$  has a value of \_\_\_\_\_ for  $f(\pi)$
- (69) If  $\log_4 8 = y$  then  $y^2 - 1.25 =$  \_\_\_\_\_
- \*(70)  $13 \times 14 \times 15 \times 16 =$  \_\_\_\_\_
- (71)  $\int_2^6 x dx =$  \_\_\_\_\_
- (72) The rectangular coordinates of the polar coordinates  $(3\sqrt{2}, \frac{\pi}{4})$  are  $(x, y)$ .  $x =$  \_\_\_\_\_
- (73) Find  $x$ ,  $0 \leq x \leq 6$ , if  $5x + 2 \equiv 8 \pmod{7}$ . \_\_\_\_\_
- (74) What is the 5th triangular number? \_\_\_\_\_
- (75)  $\lim_{x \rightarrow 0} \frac{e^x - 1}{x} =$  \_\_\_\_\_
- (76) The minimum value of  $f(x) = x^2 - 2$  is \_\_\_\_\_
- (77) If  $f(x) = 3x^2 - 2x + 1$ , then  $f'(-4) =$  \_\_\_\_\_
- (78)  $\int_{-2}^2 x^2 dx =$  \_\_\_\_\_
- (79) If the initial point of a vector is  $(3, 7)$  and the terminal point is  $(-1, 4)$ , then  $\|v\| =$  \_\_\_\_\_
- \*(80)  $798 \div 44\frac{4}{9}\% \times .25 =$  \_\_\_\_\_