

## Number Sense Exam 050, 11/18/2017

- (1)  $\frac{1}{40} =$  \_\_\_\_\_ %
- (2) Which is larger:  $-\frac{4}{9}$  or  $-\frac{3}{7}$ ? \_\_\_\_\_
- (3)  $7.26 - .89 =$  \_\_\_\_\_ (decimal)
- (4)  $357 \times 11 =$  \_\_\_\_\_
- (5)  $972 - 279 =$  \_\_\_\_\_
- (6)  $3192016 \div 9$  has a remainder of \_\_\_\_\_
- (7)  $789 + 673 =$  \_\_\_\_\_
- (8)  $\frac{3}{4} - \frac{3}{8} - \frac{3}{16} =$  \_\_\_\_\_
- (9)  $4800 \div 75 =$  \_\_\_\_\_
- \*(10)  $12 + 29 + 214 + 525 + 435 =$  \_\_\_\_\_
- (11)  $3 + 5 + 7 + \dots + 31 =$  \_\_\_\_\_
- (12) Two-thirds of a yard is equivalent to \_\_\_\_\_ inches
- (13) If 6 poles cost \$2.36 then 24 poles cost \$ \_\_\_\_\_
- (14)  $1 + 3 + 5 + \dots + 23 =$  \_\_\_\_\_
- (15)  $\text{MCXI} + \text{DLI} =$  \_\_\_\_\_ (Arabic Numeral)
- (16)  $2010 \div 9$  has a remainder of \_\_\_\_\_
- (17) If 1 gram = .04 oz., 36 oz = \_\_\_\_\_ grams.
- (18)  $1\frac{1}{3} \times 2^{-1} =$  \_\_\_\_\_
- (19) The greatest prime number less than 119 is \_\_\_\_\_
- \*(20)  $\sqrt{839} \times \sqrt{963} =$  \_\_\_\_\_
- (21)  $1.08333\dots - 1.1666\dots =$  \_\_\_\_\_
- (22) 130 base ten is equivalent to \_\_\_\_\_ base 5
- (23)  $325_6 =$  \_\_\_\_\_ <sub>10</sub>
- (24)  $95 \times 85 =$  \_\_\_\_\_
- (25)  $\sqrt[3]{1728} =$  \_\_\_\_\_
- (26)  $(-12)^3 =$  \_\_\_\_\_
- (27)  $31 \times \frac{31}{34} =$  \_\_\_\_\_ (mixed number)
- (28)  $113_6 =$  \_\_\_\_\_ <sub>10</sub>
- (29) 75% of a gallon is \_\_\_\_\_ pints
- \*(30)  $118 \times 118 - 19 \times 121 =$  \_\_\_\_\_
- (31) The product of the roots of  $(2x - 3)(x - 6) = 0$  is \_\_\_\_\_
- (32)  $\sqrt{98 \times 8} =$  \_\_\_\_\_
- (33) Given the sequence 1, 3, 6, 10,  $m$ , 21, 28, 36,  $n$ , 55,  $\dots$ , find  $m + n$ . \_\_\_\_\_
- (34)  $112 \times 102 =$  \_\_\_\_\_
- (35)  $(5! + 3!) \div 4! =$  \_\_\_\_\_ (mixed number)
- (36) 134 base 7 is equivalent to \_\_\_\_\_ base 10
- (37)  $1 - |2 - |-3 - 4|| =$  \_\_\_\_\_
- (38) Truncate  $\sqrt{\pi \times \pi}$  to the hundredth place as a decimal \_\_\_\_\_
- (39) If  $f(x) = x^2 - 6x + 9$ , then  $f(5.2) =$  \_\_\_\_\_
- \*(40)  $\sqrt{5102123} =$  \_\_\_\_\_
- (41) If  $4^x = .0625$ , then  $x =$  \_\_\_\_\_
- (42) If  $3x - 2y = 4$  and  $x + 2y = 3$ , then  $x =$  \_\_\_\_\_
- (43) The hypotenuse of a right triangle with integral sides is 41 in. The shortest leg is \_\_\_\_\_ in.
- (44) How many integers less than 15 are relatively prime to 15? \_\_\_\_\_
- (45) If 1,  $x$ , 1.44,  $-1.728$ ,  $\dots$  is a geometric sequence then the value of  $x$  is \_\_\_\_\_

- (46) Find the units digit of  $14^9$ . \_\_\_\_\_
- (47) A hexahedron has \_\_\_\_\_ faces
- (48) The sum of three consecutive integers is 72. Find the middle integer. \_\_\_\_\_
- (49) The number of distinct diagonals in a regular octagon is \_\_\_\_\_
- \*(50)  $57381 \div 128 =$  \_\_\_\_\_
- (51) The sum of the coefficients of the expansion of  $(4x - y)^3$  is \_\_\_\_\_
- (52) A binomial expansion with a third term of  $6x^4y$  has how many terms? \_\_\_\_\_
- (53)  $321 \times 123 =$  \_\_\_\_\_
- (54) The expansion of  $(4x - 3y)^5$  has \_\_\_\_\_ terms
- (55)  $\frac{2}{3} + \frac{1}{2} + \frac{3}{8} + \dots =$  \_\_\_\_\_
- (56) The largest number of regions created by five intersecting lines is \_\_\_\_\_
- (57) The simplified coefficient of the  $xy^3$  term in the expansion of  $(x - 2y)^4$  is \_\_\_\_\_
- (58)  $\sqrt{7744} =$  \_\_\_\_\_
- (59) The line of symmetry of the parabola  $y = x^2 + 2x - 3$  is  $x =$  \_\_\_\_\_
- \*(60) The area of  $14^2 + 16y^2 = 224 =$  \_\_\_\_\_
- (61)  $(6 + 5)^2 + (6^2 - 5^2) =$  \_\_\_\_\_
- (62)  $\sum_{k=1}^4 (k)^2 =$  \_\_\_\_\_
- (63)  $26_9 \div 6_9 =$  \_\_\_\_\_ 9
- (64) The simplified sum of the coefficients in the expansion of  $(4x - 2y)^6$  is \_\_\_\_\_
- (65) Find the volume of a pyramid if the area of the base is 19.5 sq. in. and its height is 6in. \_\_\_ cu. in.
- (66)  $3^3 \div 3 =$  \_\_\_\_\_ 3
- (67) If  $9^{x-1} = 27^{x+2}$  then  $x =$  \_\_\_\_\_
- (68) If  $h(x) = x^3 - 1$  and  $g(x) = (x - 1)^3$ , then  $g[h(-1)] =$  \_\_\_\_\_
- (69) If  $f(x) = \tan(e^x)$ , then  $f^{-1}[f(8)] =$  \_\_\_\_\_
- \*(70)  $2718281 \div 3141 =$  \_\_\_\_\_
- (71)  $16 \times 625 =$  \_\_\_\_\_
- (72) The rectangular coordinates of the polar coordinate  $(\sqrt{3}, \frac{\pi}{3})$  are  $(x, y)$ .  $y =$  \_\_\_\_\_
- (73) If  $f(x) = 4 - 3x$ , then  $f^{-1}(2) =$  \_\_\_\_\_
- (74) The vertical asymptote of  $\frac{2x - 1}{3x + 4}$  is \_\_\_\_\_
- (75)  $g(x) = x^4 - 3x^2 + 5x - 7$ .  $g'(1) =$  \_\_\_\_\_
- (76) Find the slope of the tangent to  $y = x^2 - 1$  at  $(2, 3)$ . \_\_\_\_\_
- (77) What is the 9th triangular number? \_\_\_\_\_
- (78) The sum of the first eight terms of the Fibonacci sequence 3, 4, 7, 11, 18, ... is \_\_\_\_\_
- (79) The smallest value of  $x$  in the domain of  $f(x)$  so that  $f(x) = \sqrt{4x + 5}$  has a real valued range is \_\_\_\_\_
- \*(80)  $375 \div 833 \times 555 =$  \_\_\_\_\_