

## Number Sense Exam 072, 11/2/2018

- (1) CXIX - XX = \_\_\_\_\_ (Arabic Numeral)
- (2) Which is larger:  $-\frac{3}{7}$  or  $-\frac{4}{9}$ ? \_\_\_\_\_
- (3)  $\frac{7}{16} =$  \_\_\_\_\_ % (decimal)
- (4)  $8 \div 4 - 2 + 4 \times 8 =$  \_\_\_\_\_
- (5)  $2002 \times 18 =$  \_\_\_\_\_
- (6)  $6543 \times 9 - 2 =$  \_\_\_\_\_
- (7) 18.75% = \_\_\_\_\_ (proper fraction)
- (8)  $4\frac{2}{5}\% =$  \_\_\_\_\_ (fraction)
- (9)  $3\frac{1}{2} + 20\frac{1}{5} =$  \_\_\_\_\_ (mixed number)
- \*(10)  $2007 - 207 + 702 - 7002 =$  \_\_\_\_\_
- (11)  $21 \div 2\frac{1}{2} =$  \_\_\_\_\_ (mixed number)
- (12)  $23^2 =$  \_\_\_\_\_
- (13) The mean of 15, 24, 27, and 34 is \_\_\_\_\_
- (14) If 1cm = .39in., then 3 meters = \_\_\_\_\_ inches.
- (15)  $4 \times 12 \div 3 - 11 =$  \_\_\_\_\_
- (16) The average of 38, 64, and 92 is \_\_\_\_\_
- (17)  $20 + 24 \times 16 \div 8 - 12 =$  \_\_\_\_\_
- (18)  $21 \times \frac{21}{23} =$  \_\_\_\_\_
- (19)  $42 \times 24 =$  \_\_\_\_\_
- \*(20)  $234 \times 252 =$  \_\_\_\_\_
- (21) If  $x + y = 5$  and  $y - x = 3$ , then  $y =$  \_\_\_\_\_
- (22) The number 36 has how many positive integral divisors? \_\_\_\_\_
- (23) 48 ounces = \_\_\_\_\_ pints
- (24) If a pencil costs \$.13 then 12 pencils cost \$ \_\_\_\_\_
- (25)  $(29 + 15 \times 8)^2 \div 7$  has a remainder of \_\_\_\_\_
- (26)  $24^2 + 38^2 =$  \_\_\_\_\_
- (27)  $-3 - 2|1 - 3| + 2| - 1 - 3| =$  \_\_\_\_\_
- (28)  $97 \times 102 =$  \_\_\_\_\_
- (29) If  $f(x) = 4x^2 + 28x + 49$  then  $f(19) =$  \_\_\_\_\_
- \*(30) 41.6% of 1438 = \_\_\_\_\_
- (31)  $32 \times 72 =$  \_\_\_\_\_
- (32)  $(10^5 - 1) \div (10 - 1) =$  \_\_\_\_\_
- (33) If  $2|3x - 5| \geq 14$ , then  $x \geq$  \_\_\_\_\_
- (34)  $(\sqrt{49} - \sqrt{169})^3 =$  \_\_\_\_\_
- (35)  $(1000 + 1001) \div 9$  has a remainder of \_\_\_\_\_
- (36) What is the largest palindrome less than 403? \_\_\_\_\_
- (37)  $4^2 + 3$  \_\_\_\_\_ 7
- (38)  $112 \times 102 =$  \_\_\_\_\_
- (39)  $1.3444\dots =$  \_\_\_\_\_ (mixed number)
- \*(40)  $\sqrt[3]{1730} \times \sqrt{223} \times 18 =$  \_\_\_\_\_
- (41) If the GCD of  $x$  and 20 is 5 and their LCM is 180, then  $x =$  \_\_\_\_\_
- (42) Find the units digit of  $13^7$ . \_\_\_\_\_
- (43) The short leg of a  $30^\circ - 60^\circ - 90^\circ$  right triangle is 4 cm. The hypotenuse is \_\_\_\_\_ cm.
- (44) The point (3, 2) is reflected across the x-axis to the point  $(h, k)$ . Find  $h + k$ . \_\_\_\_\_
- (45)  $4! - 6! =$  \_\_\_\_\_
- (46)  $707^2 =$  \_\_\_\_\_

- (47)  $55 \div .454545\dots =$  \_\_\_\_\_
- (48)  $101_2 + 102_3 + 103_4 =$  \_\_\_\_\_  $_{10}$
- (49)  $34 \times 74 =$  \_\_\_\_\_
- \*(50)  $18^2 \div 9^3 \times 3^6 =$  \_\_\_\_\_
- (51) The legs of a right triangle are  $9''$  and  $40''$ . The length of the altitude to the hypotenuse is \_\_\_\_\_ inches.
- (52) How many ordered pairs are in the Cartesian product of  $\{1, 2, 3\}$  and  $\{4, 5\}$ ? \_\_\_\_\_
- (53)  ${}_8C_4 =$  \_\_\_\_\_
- (54) Let  $\frac{8!}{6!} = \frac{x!}{(x-1)!}$ . Find  $x$ . \_\_\_\_\_
- (55)  $35^4 \div 11$  has a remainder of \_\_\_\_\_
- (56) The simplified coefficient of the 4th term in the expansion of  $(2x - y)^5$  is \_\_\_\_\_
- (57) Let  $\frac{7!}{5!} = \frac{(x-1)!}{(x-2)!}$ . Find  $x$ . \_\_\_\_\_
- (58)  $\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} =$  \_\_\_\_\_
- (59)  ${}_6P_4 \div {}_6C_2 =$  \_\_\_\_\_
- \*(60)  $10e \times 10\pi \times 10\phi =$  \_\_\_\_\_
- (61)  $1^2 - 2^2 + 3^2 - 4^2 + \dots - 10^2 =$  \_\_\_\_\_
- (62) If  $\begin{bmatrix} 5 & 1 \\ 3 & 2 \end{bmatrix} \times \begin{bmatrix} 2 & 1 \\ 2 & 3 \end{bmatrix} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ , then  $c =$  \_\_\_\_\_
- (63)  $\sqrt{19044} =$  \_\_\_\_\_
- (64) If  $\sin\left(\frac{\pi}{3}\right) = \cos(A)$ ,  $A \in QI$ , then  $A =$  \_ radians
- (65) If  $f(x) = x^2 - 9$  and  $g(x) = 2x + 1$ , then  $f[g(2)] =$  \_\_\_\_\_
- (66)  $\frac{5}{2} + \frac{2}{5} \times \frac{1}{4} =$  \_\_\_\_\_
- (67) Five coins are tossed. What is the probability of getting 4 tails and 1 head? \_\_\_\_\_
- (68) The slope of the line  $6x - 4y = -2$  is \_\_\_\_\_
- (69) How many lines are determined by 4 points no three of which are collinear? \_\_\_\_\_
- \*(70)  $94 \times 96 \times 102 \times 104 =$  \_\_\_\_\_
- (71) The radius of the inscribed circle of a 5, 12, 13 right triangle is \_\_\_\_\_
- (72)  $\frac{7}{6} + \frac{7}{12} + \frac{7}{20} =$  \_\_\_\_\_
- (73) Change  $\frac{9}{16}$  to a base 4 decimal. \_\_\_\_\_ base 4
- (74)  $\frac{1}{10} + \frac{1}{40} + \frac{1}{88} + \frac{1}{154} =$  \_\_\_\_\_
- (75)  $1^3 + 2^3 + 3^3 + \dots + 10^3 =$  \_\_\_\_\_
- (76)  $y = \frac{x^3 + 1}{x^3 - 1}$  has how many asymptotes? \_\_\_\_\_
- (77)  $\int_1^2 x^3 dx =$  \_\_\_\_\_
- (78)  $\int_0^2 (3x + 2) dx =$  \_\_\_\_\_
- (79) The horizontal asymptote for  $f(x) = \frac{2x - 1}{x}$  is  $y =$  \_\_\_\_\_
- \*(80)  $(3\pi)^4 =$  \_\_\_\_\_