

## Number Sense Exam 005, 12/26/2016

- (1)  $46^2 =$  \_\_\_\_\_
- (2)  $31 \times 13 =$  \_\_\_\_\_
- (3)  $1\frac{3}{5} - 2.2 =$  \_\_\_\_\_
- (4)  $\frac{4}{5} \times \frac{5}{6} =$  \_\_\_\_\_
- (5)  $64 \div 25 =$  \_\_\_\_\_
- (6)  $16^2 =$  \_\_\_\_\_
- (7)  $2 + 3 \div 4 \times 5 - 6 =$  \_\_\_\_\_
- (8)  $9 + 6 \div 3 - 3 \times 6 =$  \_\_\_\_\_
- (9)  $297 \div 11 =$  \_\_\_\_\_
- \*(10)  $7766 - 555 + 44 =$  \_\_\_\_\_
- (11) Which is smaller,  $-\frac{2}{7}$  or  $-\frac{3}{8}$ ? \_\_\_\_\_
- (12) The reciprocal of .24 is \_\_\_\_\_
- (13) If 1 gram = .04 oz., then 4 oz. = \_\_\_\_\_ grams
- (14)  $.2111\dots =$  \_\_\_\_\_ (proper fraction)
- (15)  $(34 + 65 + 96) \div 3$  has a remainder of \_\_\_\_\_
- (16)  $\text{MMVIII} - \text{MIV} =$  \_\_\_\_\_ (Arabic Numeral)
- (17) Which is larger,  $-\frac{7}{2}$  or  $-\frac{22}{7}$ ? \_\_\_\_\_
- (18) If 1 gram = .04 oz., 36 oz = \_\_\_\_\_ grams.
- (19) The  $\text{GCD}(16, 20) - \text{LCM}(16, 20)$  is \_\_\_\_\_
- \*(20)  $\sqrt{1090} \times 31 =$  \_\_\_\_\_
- (21) The time it will take Ted to drive 360 miles at an average speed of 45 mph is \_\_\_\_\_ hours
- (22) 4.4 is what percent of 20? \_\_\_\_\_ %
- (23)  $.777\dots - .333\dots + .555\dots =$  \_\_\_\_\_
- (24) If  $f(x) = 25x^2 - 10x + 1$ , then  $f(4) =$  \_\_\_\_\_
- (25) The number of positive integral divisors of  $5^3 \times 3^2 \times 2^1$  is \_\_\_\_\_
- (26)  $11 \times 24 \times 25 =$  \_\_\_\_\_
- (27)  $\sqrt[3]{2197} =$  \_\_\_\_\_
- (28) If a pencil costs \$.13 then 12 pencils cost \$ \_\_\_\_\_
- (29) The product of 4 and  $x$  equals the sum of 4 and  $x$ . Find  $x$ . \_\_\_\_\_
- \*(30)  $138 \times 3 \times 142 =$  \_\_\_\_\_
- (31)  $4^4 + 4^2 + 4^0 =$  \_\_\_\_\_ base 4
- (32) If  $3.2 \times k = 1$ , then  $k =$  \_\_\_\_\_
- (33) If Universal set  $U = \{2, 3, 5, 7, 9, 11, 13, 17, 19\}$  and set  $A = \{3, 7, 13, 17\}$ , then  $A'$  contains how many distinct elements? \_\_\_\_\_
- (34)  $.2888\dots =$  \_\_\_\_\_ (fraction)
- (35) The cube root of 50653 is \_\_\_\_\_
- (36) The sum of the roots of  $(3x - 2)(2x + 1) = 0$  is \_\_\_\_\_
- (37) The smallest root of  $x^2 + x = 20$  is \_\_\_\_\_
- (38) If  $a = 5$  and  $b = 3$ , then  $(a - b)(a^2 + ab + b^2) =$  \_\_\_\_\_
- (39) If 4 notepads cost 18 cents then 18 notepads cost \$ \_\_\_\_\_
- \*(40)  $\sqrt{13579} =$  \_\_\_\_\_
- (41)  $\dots, -\frac{3}{8}, \frac{1}{4}, -\frac{1}{6}, x, -\frac{2}{27}, \dots$  is a geometric sequence. The value of  $x$  is \_\_\_\_\_
- (42) If  $2^{3.14} = 8.82$ , then  $2^{2.14} =$  \_\_\_\_\_
- (43)  $13 \times 15 + 1 =$  \_\_\_\_\_
- (44)  $7\frac{1}{7}\% =$  \_\_\_\_\_ (proper fraction)

- (45)  $113 \times 106 =$  \_\_\_\_\_
- (46) If  $3x + 5 = 2x - 4$  then  $x =$  \_\_\_\_\_
- (47)  $14 \times 25 + 12.5 \times 28 =$  \_\_\_\_\_
- (48) A septagon has \_\_\_\_\_ sides
- (49) The area of an equilateral triangle is  $4\sqrt{3}$  cm<sup>2</sup>. Its perimeter is \_\_\_\_\_ cm.
- \*(50)  $80520 \div 131 =$  \_\_\_\_\_
- (51) If  $3^x = 1.2$  then  $9^x =$  \_\_\_\_\_
- (52)  $89 \times 97 =$  \_\_\_\_\_
- (53) the largest integer  $x$  such that  $3x - 4 < -5$  is \_\_\_\_\_
- (54) If  $(\sqrt[3]{a^4})(\sqrt[5]{a^k}) = \sqrt[15]{a^{26}}$ , then  $k =$  \_\_\_\_\_
- (55)  $(3 - 5i)(3 - 5i) = a + bi$ . Find  $a$ . \_\_\_\_\_
- (56)  $f(x) = 2x - \log_3 x$ , evaluate  $f(9)$ . \_\_\_\_\_
- (57) Find the probability of drawing a face card from a standard deck of cards. \_\_\_\_\_
- (58)  $42 \times 43 =$  \_\_\_\_\_
- (59)  $(k - 4i)^2 = -7 - 24i$ . Find  $k$ . \_\_\_\_\_
- \*(60)  $75^2 \div 25^3 \times 50^4 =$  \_\_\_\_\_
- (61) The slope of the line containing the points  $(-4, 3)$  and  $(3, -2)$  is \_\_\_\_\_
- (62) The remainder, in base 6, when 234 is divided by 6 is \_\_\_\_\_
- (63) The slope of the line  $6x - 4y = -2$  is \_\_\_\_\_
- (64) The slope of the line containing the points  $(-1, 1)$  and  $(2, -2)$  is \_\_\_\_\_
- (65)  $\sqrt{444889} =$  \_\_\_\_\_
- (66)  $888 \times \frac{4}{37} =$  \_\_\_\_\_
- (67) The surface area of a sphere with radius 4 is  $k\pi$  and  $k =$  \_\_\_\_\_
- (68)  $19^2 - 18^2 + 17^2 - 16^2 =$  \_\_\_\_\_
- (69)  $(2468_9 + 1357_9) \div 8$  has a remainder of \_\_\_\_\_
- \*(70) The perimeter of the ellipse  $145x^2 + 168y^2 = 24360$  is \_\_\_\_\_
- (71) If  $f(x) = 3x - 1$  and  $g(x) = 2$  then  $f(g(x)) =$  \_\_\_\_\_
- (72)  $\int_{-2}^2 x^2 dx =$  \_\_\_\_\_
- (73) If  $f(x) = x^2 + 4x$  then  $f'(3) =$  \_\_\_\_\_
- (74) In a 3, 4, 5 right triangle, if  $\cos(B) = \frac{3}{5}$ , then  $\sin(2B) =$  \_\_\_\_\_
- (75)  $\int_2^6 x dx =$  \_\_\_\_\_
- (76)  $f(x) = x^4 + 4x^3 + 6x^2 + 4x + 1$ . Find  $f'(-1) =$  \_\_\_\_\_
- (77) The vertex of the parabola  $3(y - 4) = (x + 2)^2$  is  $(h, k)$  and  $h =$  \_\_\_\_\_
- (78) Change .44 base 8 to a base 10 fraction. \_\_\_\_\_
- (79) The radius of the inscribed circle of a 6, 8, 10, right triangle is \_\_\_\_\_
- \*(80)  $797 \div 87.5\% \times \frac{7}{10} =$  \_\_\_\_\_