Number Sense Exam 042, 9/21/2017

(1) $\$15.15 \times 4 = \$$ _____

(2) $7.5\% =$ _____ (proper fraction)

(3) $2.01 - 2\frac{1}{10} + 21 =$ _____ (decimal)

(4) $2070 - 2800 =$ _____

(5) $3\frac{2}{3} \div 1\frac{5}{6} =$ _____

(6) $13 \times 11 + 12 - 11 =$ _____

(7) $299 \times 12 + 12 =$ _____

(8) $7136 - 6317 =$ _____

(9) $3^0 + 2 \times 5 + 4^{-1} =$ _____ (decimal)

*(10) $753 - 936 + 842 =$ _____

(11) The average of $41, 62$, and 80 is _____

(12) $|3 - 2| - 1 + |2 - 0| + |1 - 5| =$ _____

(13) $\frac{3^1}{(2^3)(5^2)} =$ _____ (decimal)

(14) $1 + 3 + 5 + 7 + \ldots + 31 =$ _____

(15) $\frac{5}{6} - \frac{6}{5} =$ _____

(16) 4.3 is _____ % of 20.

(17) CMIX − CDIV = _____ (Arabic Numeral)

(18) $\frac{7}{12} - \frac{7}{24} - \frac{7}{36} =$ _____

(19) $3\frac{4}{5} - 8\frac{9}{10} =$ _____ (mixed number)

*(20) $123456 \div 789 =$ _____

(21) The additive inverse of $-\frac{3}{5}$ is _____

(22) $(34 + 27 \times 25) \div 4$ has a remainder of _____

(23) If $f(x) = x^2 - 10x + 25$, then $f(37) =$ _____

(24) The median of $34, 28, 33, 21, 28, 31, 30$ is _____

(25) $74^2 - 73^2 =$ _____

(26) A rhombus has _____ distinct diagonals

(27) The sum of three consecutive odd integers is 69. The largest of the integers is _____

(28) $11\frac{4}{7} \times 11\frac{3}{7} =$ _____ (mixed number)

(29) 56 has _____ positive integral divisors

*(30) $(38 \div 4 \times 2 + 110)^2$ _____

(31) How many integers less than 20 are relatively prime to 20? _____

(32) R_1 and R_2 are the roots of $2x^2 - 3x = 5$. Find $(R_1 + R_2)(R_1 \times R_2)$. _____

(33) $120514 \div 11$ has a remainder of _____

(34) If $f(x) = x^2 - 2x + 1$, then $f(2.1) =$ _____

(35) 33 plus 75% of 44 is _____

(36) $6 \times 6! - 18 \times 5! =$ _____

(37) The largest value of x such that $|3x + 2| \leq 11$ is _____

(38) 30 has how many integral divisors? _____

(39) $|-6-1| + |-5+2| - |4-3| =$ _____

*(40) $79.4 \div \frac{1}{9} \times 133\frac{1}{3}\%$ _____

(41) $\ldots, 2, x, .75, y, \ldots$ is an arithmetic sequence. Find the value of $x + y$. _____

(42) A triangle has integral sides of $6, 14$, and x. The greatest value of x is _____

(43) The sum of the product of the roots taken two at a time of $x^4 - 3x^2 - 4x = -4$ is _____

(44) The short leg of a $30° - 60° - 90°$ right triangle is 4 cm. The hypotenuse is _____ cm.

(45) $14 \times 715 =$ _____

(46) $(3 - 4\text{i})^2 = a + b\text{i}$. Find $a + b$. _____

(47) $y = x^2 - 2x + 3$ has a vertex at (h, k). Then $h + k =$ _____

(48) A nonagon has _____ distinct diagonals

(49) The slope of the line $\frac{2}{3}x - 4y = 1$ is _____

*(50) $171097 \div 111 =$ _____

(51) 18% of $133\frac{1}{3}$ is _____

(52) How many distinct 6 letter words, imaginary or real, can be made using the letters d, e, g, r, e, e? _____

(53) $(1 - \text{i})(1 + \text{i}) = a + b\text{i}$. Find $a + b$. _____

(54) $y = x^2 - 6x - 1$ has a vertex of (h, k). $k =$ _____

(55) How many distinct diagonals can be drawn inside an undecagon? _____

(56) ${}_6\text{C}_4 =$ _____

(57) If x and y vary inversely and $x = 3$ when $y = 5$, then $x =$ _____ when $y = 4$.

(58) How many distinct 5 letter words, real or imaginary, can be made using the letters s, c, o, t, t?

(59) $\tan^2 60°$ _____

*(60) $\pi^3 \times e^2 =$ _____

(61) The greatest integer less than -2.3 is _____

(62) If $\log_x 50 - \log_x 2 = 2$, then $x =$ _____

(63) 88 feet per second = _____ miles per hour

(64) $.7 \sin^2 30° + .7 \cos^2 30° =$ _____

(65) If $(a + 3\text{i})^2 = -5 - 12\text{i}$ then $a =$ _____

(66) $22_5 \times 4_5 + 2_5 =$ _____ 5

(67) The first four digits of the decimal for $\frac{17}{45}$ is 0. _____

(68) $\sin \frac{\pi}{4} \div \cos \frac{\pi}{4} =$ _____

(69) $31^2 - 33^2 + 35^2 - 37^2 =$ _____

*(70) $4\pi^4 =$ _____

(71) The n-th term of $4, 10, 16, 22, \ldots$ is _____

(72) If $f(x) = 3x^4 - 2x^3 + x^2$, then $f''(1) =$ _____

(73) $122_7 \div 5_7 =$ _____ 7

(74) The 8th octagonal number is _____

(75) $\lim_{x \to \infty} \frac{2x - 1}{1 - 3x} =$ _____

(76) $111 \times 35 =$ _____

(77) If $A = \begin{bmatrix} 3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 4 \\ 1 \end{bmatrix}$, then $AB =$ _____

(78) The horizontal asymptote for $f(x) = \frac{2x - 1}{x}$ is $y =$ _____

(79) If $f(x) = 4 - 3x - 2x^2$ then $f'(-1) =$ _____

*(80) $10321 \div 126 =$ _____