Number Sense Exam 049, 11/11/2017

(1) $28.7 \div .07 =$ _____

(2) $2006 =$ _____

(3) $5\frac{3}{4} - 4\frac{2}{3} =$ _____ (mixed number)

(4) Which is smaller: $\frac{7}{12}$ or $\frac{6}{11}$? _____

(5) $3368 \div 11$ has a remainder of _____

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

(7) $743 - 347 =$ _____

(8) $2070 - 2800 =$ _____

(9) $2010 \div 11$ has a remainder of _____

*(10) $9876 - 543 + 345 - 6789 =$ _____

(11) $27^2 =$ _____

(12) $41 \times 41 =$ _____

(13) The mean of 23, 27, 35, and 31 is _____

(14) $\frac{7}{8} - \frac{9}{10} =$ _____

(15) $15 \times 38 =$ _____

(16) The GCD of 78 and 26 is _____

(17) The LCM of 48 and 57 is _____

(18) $\frac{15}{19} \times 15 =$ _____ (mixed number)

(19) If a 6-pack of 12 oz. cans of soda costs \$4.50, then one 12 oz. can will cost \$ _____

*(20) $457689 \div 111 =$ _____

(21) $8\frac{1}{3}\%$ of 48% of $250 =$ _____

(22) $11\frac{4}{7} \times 11\frac{3}{7} =$ _____ (mixed number)

(23) $3^4 + 2^5 - 4^3 = k^2$. $k =$ _____

(24) Which of the following is both a happy and a perfect number: 7, 28, or 42? _____

(25) How many positive integers divide 64? _____

(26) If the sum of five consecutive even integers is 120 then the largest integer is _____

(27) A 6-element set has _____ subsets

(28) The largest root of $x^2 + x - 30 = 0$ is _____

(29) $37^2 + 67^2 =$ _____

*(30) $\sqrt{350} \times \sqrt{730} =$ _____

(31) How many subsets of the set $\{p, o, i, n, t\}$ are 2-element or 3-element subsets? _____

(32) The next term in the arithmetic sequence, $\ldots, \frac{2}{3}, \frac{7}{6}, \frac{5}{3}, \ldots$ is _____

(33) $16 \times 66 - 16 \times 50 =$ _____

(34) If $x < 0$ and $|3x + 4| = 14$, then x is _____

(35) $6\frac{2}{5} \times 6\frac{3}{5} =$ _____ (mixed number)

(36) The sum of the positive integral divisors of 40 is _____

(37) If $4x - 6 = 7x + 12$, then $x =$ _____

(38) $5^4 \div 11$ has a remainder of _____

(39) $\{l, i, n, e\} \cap \{s, l, o, p, e\}$ has ____distinct elements

*(40) $11 \times 22 \times 33 =$ _____

(41) Find the units digit of 13^5. _____

(42) The sum of the roots plus the product of the roots of the equation $8x^3 - 5x^2 - 26x + 15 = 0$ is _____

(43) $\frac{5}{8} - \frac{54}{89} =$ _____

(44) If a set as 3 proper subsets, then it has _____ elements in the set.

(45) $\frac{3}{4} - \frac{8}{13} =$ _____

(46) An octahedron has _____ edges

(47) $40°\text{C} =$ _____ °F

(48) If hypotenuse of $30° - 60°$ right triangle is 10 units, then the leg opposite the $30°$ angle is _____ units

(49) The smallest leg of a right triangle with integral sides is $7''$. The hypotenuse is _____ inches

*(50) $3^9 \div 6^6 \times 9^3 =$ _____

(51) $12_4 \times 2_4 \div 3_4 =$ _____ $_4$

(52) If $(5 + \text{i})^2 = a + b\text{i}$, then $a =$ _____

(53) Find the 15th term of $3, 8, 13, 18, 23, \ldots$ _____

(54) The ninth term of 9, 14, 19, 24, ... is _____

(55) $202 \times 34 =$ _____

(56) If ${}_x\text{C}_5 = {}_x\text{C}_2$, then $x =$ _____

(57) $24_5 \times 4_5 =$ _____ $_5$

(58) A sector of a circle with radius $12''$, central angle $30°$, and arc length $k\pi''$. Find k. _____

(59) $54 \times 59 =$ _____

*(60) $625 \times 888 \div 55 =$ _____

(61) $2^3 \times 3^4 \times 5^5 =$ _____

(62) The determinate of $\begin{bmatrix} 5 & 3 \\ -1 & 2 \end{bmatrix}$ is _____

(63) $2\left[\cos(30°)(\cos(30°)\right] - 1 =$ _____

(64) $(3 + 5\text{i})^2 = a + b\text{i}$ and $a =$ _____

(65) If $(4+2)! \equiv x (\text{mod} 7)$, where $0 \leq x \leq 6$, then $x =$

(66) Three coins are tossed.Find the odds of getting 3 tails. _____

(67) $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \times \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix} = \begin{bmatrix} a & c \\ b & d \end{bmatrix}$. Find d. _____

(68) The sum of the exterior angles of a regulard octagon is _____ degrees

(69) If $\sqrt{4 - \sqrt{3 + \sqrt{x - 2}}} = 1$, then $x =$ _____

*(70) $(1 + 4 + 7 + 10 + 13 + 16 + 19)^2 =$ _____

(71) $\int_{-1}^{1} x^2 \, dx =$ _____

(72) $\int_{-1}^{3} (2x - 1) \, dx =$ _____

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

(74) If $u = (2, -3)$ and $v = (4, 4)$ are vectors, then their dot product is _____

(75) How many lines are determined by 5 points, no 3 of which are collinear? _____

(76) $2\frac{2}{5} \times 4\frac{1}{6} =$ _____

(77) If $f(x) = 4x^2 - 7x - 5$, then $f''(3) =$ _____

(78) Find x, $1 \leq x \leq 5$, if $3x - 2 \equiv 3 (\text{mod } 7)$. _____

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

*(80) $45678 \div 111 =$ _____