# Number Sense Exam 045, 10/14/2017

(1) $20.09 + 90.02 =$ _____ (decimal)

(2) $\frac{2}{7} \div 3\frac{1}{7} =$ _____

(3) $48 \times 75 =$ _____

(4) $18^2 =$ _____

(5) $22 \times 22 =$ _____

(6) $297 \div 11 =$ _____

(7) $11 \times 65 =$ _____

(8) $2001 \times 17 + 3 =$ _____

(9) $64\% =$ _____ (proper fraction)

*(10) $213 + 4711 + 1829 - 47 =$ _____

(11) How many elements are in $\{x \mid 30 < x < 40$, where $x \in \{\text{Primes}\}\}$? _____

(12) $7\frac{2}{9} - 5\frac{1}{6} =$ _____ (mixed number)

(13) CDLX + XCVI = _____ (Arabic Numeral)

(14) $32 \times 23 =$ _____

(15) DCLX $\times$ IX = _____ (Arabic Numeral)

(16) 4 gallons + 12 pints = _____ quarts

(17) $214 \times 16 =$ _____

(18) $12 \div (5 - 1) + 3 \times 4 =$ _____

(19) The greatest prime number less than 99 is _____

*(20) $\sqrt{678} \times \sqrt{1154} =$ _____

(21) $|-1| - 1 + |-2| + 3 - 5 \times |-8| =$ _____

(22) $72 \times 78 =$ _____

(23) If $3^x + 3 = 30$, then $x =$ _____

(24) $24^2 + 12^2 =$ _____

(25) $6\frac{2}{5} \times 10\frac{2}{3} =$ _____ (mixed number)

(26) Divide 89 into 2 parts such that the larger number exceeds the smaller number by 45. Find the larger number. _____

(27) $1.777\ldots - 1.555\ldots + 1.333\ldots =$ _____

(28) The square root of $27 \times 48$ is _____

(29) The $y$-intercept of the line $y = 6x + 4$ is $(a, b)$. $a =$ _____

*(30) $21^4 =$ _____

(31) If $4x^4 - 3x^3 + 3x^2 - 4x + 3 = 0$, then the product of the roots is _____

(32) $16\frac{2}{3}\%$ of 60 less 12 is _____

(33) The set $\{F, U, N\}$ has _____ subsets

(34) $12\frac{1}{6} \times 6\frac{5}{6} =$ _____ (mixed number)

(35) If 8 is to 9 as 10 is to $x$, then $x =$ _____

(36) If the universal set $U = \{n, u, m, b, e, r, s\}$ and set $A = \{s, u, m\}$, then the complement of set $A$ contains how many distinct elements? _____

(37) A regular hexagon with side length of $4''$ has a perimeter of _____ inches

(38) The product of the largest prime even integers and the smallest prime odd integer is _____

(39) If $3x + 4 = 5$, then $x^2 =$ _____

*(40) $22052 \div 148 =$ _____

(41) The side opposite $60^\circ$ in a right triangle is $2\sqrt{3}$ and the hypotenuse is _____

(42) If $3^{(x-1)} = 13.1$, then $3^{(x+1)} =$ _____

(43) $2 + 5 + 7 + 12 + 19 + \ldots + 81 =$ _____

(44) The measure of each of the interior angles of a regular decagon is _____ degrees

(45) 3 gallons = _____ cu. inches.

(46) $123 \times 123 =$ _____

(47) The smallest integer $x$ such that $1 - x < 7$ is ___

(48) $5^3 \times 2^5 =$ _____

(49) $64 \div .25 =$ _____

*(50) $39 \times 41 \times 19 \times 21 =$ _____

(51) Two numbers are in the ratio of 3 : 11. If their sum is 84, find the smaller number. _____

(52) $34_6 \times 5_6 =$ _____ 6

(53) If two dice are rolled, the probability that the sum of the faces is greater than 10 is _____

(54) For $x^2 - 12x + k = 0$ to have one real solution, $k$ has to have a value of _____

(55) ${}_7C_4 =$ _____

(56) $13 \times 332 =$ _____

(57) $\frac{7}{9} - \frac{19}{29} =$ _____

(58) $47^2 + 40^2 - 7^2 =$ _____

(59) The modulus of $7 - 24i$ is _____

*(60) $32 \times 33 + 27 \times 26 =$ _____

(61) $1^2 - 2^2 + 3^2 - 4^2 =$ _____

(62) $4\cos^2 45^\circ + 4\sin^2 45^\circ$ _____

(63) Let $A = \begin{bmatrix} 3 & 1 \\ -2 & 2 \end{bmatrix}$. The determinant of $A$ is ___

(64) If $(\sqrt[4]{a^2})(\sqrt[3]{a}) = (\sqrt[n]{a^k})$, where $n$ and $k$ are relatively prime, then $n =$ _____

(65) $2\sin 15^\circ \sin 75^\circ =$ _____

(66) $404 \times 111 =$ _____

(67) If $f(x) = x - 5$ and $g(x) = 5 + x$, then $g(f(1)) =$ _____

(68) $f(x) = 5x^2 - 7$ and $g(x) = 4 - 2x$. $f(g(3)) =$ ___

(69) The number of distinct diagonals that can be drawn from a vertex of a regular decagon is _____

*(70) $e^\pi \times \pi^e =$ _____

(71) Change .33 base 6 to a base 10 fraction. _____

(72) Find $x$, $0 \leq x < 7$, if $\frac{(5!)(3!)}{(4!)} \equiv x (\text{mod} 7)$. _____

(73) Change .32 base 6 to a base 10 fraction. _____

(74) The circle $x^2 + y^2 - 2x + 4y - 10 = 0$ has a center point at $(h, k)$. $h =$ _____

(75) $\int_0^1 \sqrt[3]{x}\, dx =$ _____

(76) $f(x) = x^4 + 4x^3 + 6x^2 + 4x + 1$, find $f'(1)$. ___

(77) $\det \begin{bmatrix} 8 & 4 \\ 3 & 5 \end{bmatrix} =$ _____

(78) $\lim_{x \to \infty} \left( \frac{5}{x+2} \right) =$ _____

(79) The sum of the first 5 triangular numbers is ___

*(80) $857.142 \times 35 =$ _____