Number Sense Exam 031, 7/16/2017

(1) $\frac{1}{12} =$ _____ %

(2) $2008 - 2009 =$ _____

(3) $304\% =$ _____ (mixed number)

(4) $\frac{5}{6} + \frac{7}{8} =$ _____ (improper fraction)

(5) $123 \times 8 + 3 =$ _____

(6) $28 - 208 - 2008 =$ _____

(7) $\frac{13}{8} =$ _____ % (decimal)

(8) $11 \times 328 =$ _____

(9) $82.4 - 7.83 =$ _____

*(10) $862 + 1206 + 2094 =$ _____

(11) $6\frac{3}{5} \div 11 =$ _____ (decimal)

(12) $1 + 3 + 5 + 7 + \ldots + 43 =$ _____

(13) $\text{LCM}(12, 20) \times \text{GCD}(12, 20) =$ _____

(14) 2ft. × 3ft. × 4ft. = _____ cubic yards

(15) 18% of 22 = _____ (decimal)

(16) CLXXII = _____ (Arabic Numeral)

(17) A 4-element set has _____ subsets

(18) 12% of 12 = _____ (decimal)

(19) The GCD of 92 and 29 is _____

*(20) $\sqrt{8679} =$ _____

(21) Find the smallest integer $k, k > 1$ such that $3k - 2$ is a prime number. _____

(22) $12 \times 345 =$ _____

(23) $|1 - 3| - |6 + 10| + |15 - 21| =$ _____

(24) $(11 + 23 \times 9 - 17) \div 4$ has a remainder of _____

(25) $113_6 =$ _____ 10

(26) 45 is $2\frac{1}{2}\%$ of _____

(27) The slope of the line through the points $(5, -3)$ and $(2, 1)$ is _____

(28) $3\frac{2}{5} + 5\frac{2}{3} =$ _____ (mixed number)

(29) 115% of 15 is _____

*(30) $41 \times 42 + 43 \times 40 =$ _____

(31) If $\frac{a}{7}$ has a remainder of 5 and $\frac{b}{7}$ has a remainder of 2, then $\frac{ab}{7}$ has a remainder of _____

(32) The larger root of $x^2 - 7x - 12 = 0$ is _____

(33) Let $x = 3$, $y = 2x$, and $z = x - y$. Find xyz. ____

(34) If $\sqrt{125} - \sqrt{45} = \sqrt{x}$, then $x =$ _____

(35) $\{T, M, S, C, A, 2, 0, 1, 3\}$ has ____ proper subsets

(36) A square has a diagonal of $4\sqrt{2}$ cm. The perimeter of the square is _____ cm.

(37) If 6 pears cost \$1.32, then 9 pears cost \$ _____

(38) $45 \times 85 =$ _____

(39) $15^2 + 45^2 =$ _____

*(40) $43 \times 54 \times 65 =$ _____

(41) $\frac{3!}{4! + 2!} =$ _____

(42) The leg opposite the 45° angle in a right triangle is $3\sqrt{2}$. The hypotenuse is _____

(43) If P is $\frac{2}{3}$ of Q and Q is $33\frac{1}{3}\%$ of R, then P is what percent of R? _____ %

(44) The units digit of 17^{17} is _____

(45) If $8^x = 40$ then $8^{(x+1)} =$ _____

(46) $\dfrac{5}{8} - \dfrac{54}{89} =$ _____

(47) Find k if the product of the roots of $x^2+2x+k = 0$ is 8. $k =$ _____

(48) $66 \div .75 =$ _____

(49) 60 miles per hour = _____ feet per second

*(50) $2142.857 \times 213 =$ _____

(51) $(2 - 5\text{i})(3 - 4\text{i}) = a + b\text{i}$. Find $a - b$. _____

(52) The point $(-2, -4)$ is reflected over the y-axis to the point (h, k). Find k. _____

(53) $1 - 4 + 9 - 16 + 25 - 36 + \ldots - 64 =$ _____

(54) The simplified coefficient of the 4th term in the expansion of $(2x - y)^5$ is _____

(55) If y varies directly with x^2 and $y = 8$ when $x = 2$, find y when $x = 5$. _____

(56) $135 \times 152 =$ _____

(57) For what value of k does the sum of the roots of $x^2 + kx + 12 = 0$ have a value of 6? _____

(58) A sector of a circle with a radius $8''$ and central angle $\dfrac{\pi}{4}$ has arc length $k\pi''$. $k =$ _____

(59) $\sin\left(-\dfrac{\pi}{6}\right) \times \cos\left(\dfrac{\pi}{3}\right) =$ _____

*(60) $32^3 =$ _____

(61) $2\cos^2(15^\circ) - 1 =$ _____

(62) $\cos\left[\sin^{-1}\left(\dfrac{\sqrt{3}}{2}\right)\right] =$ _____

(63) $56^2 - 55^2 + 54^2 - 53^2 =$ _____

(64) If $A = 1.2B$ and $A = 2C$ then $B =$ _____ % of C

(65) $\log_4 27 \div \log_4 3 =$ _____

(66) Truncate $(5\sqrt{2} + 4\sqrt{3})$ to the nearest whole number. _____

(67) $\cos(\sec^{-1} 2.5) =$ _____

(68) $\ln(e^4) + \ln(e^9) \div \ln(e^3) =$ _____

(69) $26_9 \div 6_9 =$ _____ 9

*(70) $2\pi^5 =$ _____

(71) If $f(x) = 3x^2 - 1$ and $g(x) = 2x - 3$, then find $f(g(4))$. _____

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

(73) $\displaystyle\sum_{1}^{3}(-x)^x =$ _____

(74) Find the slope of the line tangent to $y = 3x^2$ at the point $(1, 3)$. _____

(75) $\displaystyle\int_{2}^{3} x^2\,dx =$ _____

(76) Change .63 base 7 to a base 10 fraction. _____

(77) $\displaystyle\lim_{x\to 0}\frac{2 - \sqrt{4 + x}}{x} =$ _____

(78) If $f(x) = .5x^2 - 3x + 1$, then $f'(2) =$ _____

(79) Find the maximum product of x and y if $x + y = 22$, and $x, y > 0$. _____

*(80) 624 miles is equivalent to _____ rods