Number Sense Exam 037, 8/25/2017

(1) $12 \times 22 + 16 \times 22 =$ _____

(2) $15 \times 28 =$ _____

(3) $4321 + 1234 =$ _____

(4) $\frac{22}{25} =$ _____ %

(5) $2013 - 201 + 13 =$ _____

(6) $244 \times 25 =$ _____

(7) $2013 - 201 + 13 =$ _____

(8) $2080 + 7020 =$ _____

(9) $61 \times 16 =$ _____

*(10) $75 + 236 - 4198 =$ _____

(11) $65 \times 75 =$ _____

(12) $11235813 \div 6$ has a remainder of _____

(13) The mean of 17, 22, and 36 is _____

(14) $1\frac{2}{5} - 3\frac{4}{7} =$ _____ (mixed number)

(15) $634 \div 5 =$ _____ (mixed number)

(16) The mean of $34, 41$, and 51 is _____

(17) $0.13125 =$ _____ % (mixed number)

(18) $18'' \times 24'' \times 30'' =$ _____ cu. ft.

(19) The sum of the prime numbers less than or equal to 13 is _____

*(20) $412 \times 398 - 3000 =$ _____

(21) $4\frac{1}{4} \times 8\frac{1}{4} =$ _____

(22) If one dozen eggs cost \$2.40, then 2.5 dozen eggs cost \$ _____

(23) $246531 \div 9$ has a remainder of _____

(24) The 6th hexagonal number is _____

(25) $1 + 3 + 5 + \ldots + 33 =$ _____

(26) $0.222\ldots - 0.444\ldots - 0.666\ldots =$ _____

(27) If today is April 15, 2001 then 18 days ago was March _____ , 2001.

(28) $36 \div 75 =$ _____ (decimal)

(29) $38^2 - 34^2 = (2) \times ($ _____ $)$

*(30) $421456 \div 1111 =$ _____

(31) If $x = 7$ and $y = 2$, then $(x - y)(x^2 + xy + y^2) =$

(32) $24^2 + 8^2 =$ _____

(33) One dozen peaches cost \$12.84, therefore 4 peaches would cost \$ _____

(34) The cube root of 681472 is _____

(35) How many positive integers less than 18 are relatively prime to 18? _____

(36) If $x^2 + 22^2 = 27^2$, then $x^2 =$ _____

(37) $-2(-3) - (-4) + [-6 - (-7)] =$ _____

(38) $6\frac{2}{5} \times 4\frac{2}{5} =$ _____ (mixed number)

(39) $1.3444\ldots =$ _____ (mixed number)

*(40) $21^4 =$ _____

(41) $17^2 + 69^2 =$ _____

(42) $29 \times 33 + 4 =$ _____

(43) A square is to a hexagon as an octagon is to a polygon of _____ sides.

(44) $(2! + 3!) \div 5! =$ _____

(45) Find the units digit of 23^{233}. _____

(46) The largest integer x such that $3 + 2x < 15$ is ___

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

(48) The y-intercept of $6x - 2y = 8$ is (x, y). $y =$ ____

(49) If A is 25% more than B and B is 25% more than C, then A is what % more than C? _____ %

*(50) $364 \times 16^3 \div 4^3 =$ _____

(51) The x-intercept farthest to the left for $f(x) = 3x^2 - 27$ is $(x, 0)$ and $x =$ _____

(52) Given the sequence $3, 8, 11, 19 \ldots, 79, k, 207$. Find k. _____

(53) $53 \times 53 + 50 \times 50 - 3 \times 3 =$ _____

(54) The simplified coefficient of the x^2y term in the expansion of $(x - 3y)^3$ is _____

(55) ${}_8C_4 =$ _____

(56) $(\mathrm{i})^{32} =$ _____

(57) Let $\dfrac{8!}{6!} = \dfrac{x!}{(x-1)!}$, then $x =$ _____

(58) Let $a^3b^2 \times ab^{-1} \div \left(\dfrac{a}{b}\right)^2 = a^m b^n$. Find $m + n$. ___

(59) $(4 - 7\mathrm{i})(4 + 7\mathrm{i}) = a + b\mathrm{i}$. Find $a + b$. _____

*(60) $(3.1\pi)(2.7e)\left(\dfrac{1+\sqrt{5}}{2}\right) =$ _____

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

(62) If $f(x) = 4x - 5$, then $f[f^{-1}(3)] =$ _____

(63) The greatest integer function $g(x) = [2x - 3]$ has a value of _____ for $g(\pi)$

(64) If $\log_3 x = -3$ then $x^{-1} =$ _____

(65) If flipping 5 coins, what is the probability of getting 3 tails and 2 heads? _____

(66) The harmonic mean of the roots of $x^3 + Bx^2 + 3x + D = 0$ is 4. Find D. _____

(67) $\det\left(\begin{bmatrix} 1 & -2 \\ 3 & -4 \end{bmatrix} + \begin{bmatrix} 1 & 2 \\ -3 & -4 \end{bmatrix}\right) =$ _____

(68) $(x^3 - 2x^2 + 4x - 6) \div (x - 2)$ has a remainder of _____

(69) A bag has 3 red, 6 white, and 9 blue marbles. What is the probability of drawing a red one? ____

*(70) $31.4 \times 27.2 \times 16.2 =$ _____

(71) The 8th octagonal number is _____

(72) If $\begin{bmatrix} 3 & 1 \\ 2 & 2 \end{bmatrix} \times \begin{bmatrix} 2 & 1 \\ 4 & 1 \end{bmatrix} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, then $b =$ _____

(73) The 6th hexagonal number is _____

(74) The 6-th hexagonal number minus 1 is _____

(75) The volume of a circular cylinder with height 5 in. and diameter 3 in. is $k\pi$ cu. in. and $k =$ _____

(76) $(x^3 - 2x^2 + 4x - 1)$ divided by $(x - 2)$ has a remainder of _____

(77) The greatest integer function is $f(x) = [x]$. Find $f[2\sqrt{3} - \pi]$. _____

(78) $\displaystyle\sum_{k=1}^{3} (-k)^k =$ _____

(79) If $f(x) = 5 - \dfrac{4x+3}{2}$, then $f^{-1}(-1) =$ _____

*(80) $798 \div 44\dfrac{4}{9}\% \times .25 =$ _____