Number Sense Exam 041, 9/15/2017

(1) $25^2 =$ ______

(2) $2003 \times 111 =$ ______

(3) $\frac{2}{9} \div 3\frac{1}{4} =$ ______

(4) $1216 \div 4 =$ ______

(5) $(-.5) \div (-2.5) =$ ______ (decimal)

(6) $2.007 + 20.07 =$ ______ (decimal)

(7) $3456 + 6543 =$ ______

(8) $12 - 8 \div 4 \times 2 - 3 =$ ______

(9) $12 \times 342 =$ ______

*(10) $6002 + 602 + 206 - 2006 =$ ______

(11) The median of $12, 20, 8, 14, 22,$ and 12 is ______

(12) The largest prime factor of 285 is ______

(13) $322 \times 13 =$ ______

(14) $(-3)(-6) - (-7) - (-4)(8) =$ ______

(15) $\frac{5}{6} + \frac{6}{5} =$ ______ (mixed number)

(16) $2016 \div 6$ has a remainder of ______

(17) The median of $1, 5, 2, 3, 3, 2, 1, \&4$ is ______

(18) $123 \times 8 + 3 =$ ______

(19) The number of positive prime integers that divide 76 is ______

*(20) $224488 \div 111 =$ ______

(21) $15 \times 11 \times 25 =$ ______

(22) $0.2050505\ldots =$ ______ (fraction)

(23) If two dozen doughnuts cost \$1.44, then three doughnuts will cost \$ ______

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

(25) $44^2 + 36^2 =$ ______

(26) $(25 \times 12 + 18 \times 34) \div 8$ has a remainder of ______

(27) $8^7 \div 9$ has a remainder of ______

(28) If $x - y = 6$ and $x + y = -6$, then $xy =$ ______

(29) $54 \times 51 =$ ______

*(30) $7777 \times 888 =$ ______

(31) If $f(x) = x^4 - 2x^2 + 1$, then $f(3)$ is ______

(32) $15^2 - 20^2 =$ ______

(33) $4\frac{1}{4} \times 16\frac{1}{4} =$ ______ (mixed number)

(34) $5 \times 4! - 4 \times 3! - 3 \times 2! =$ ______

(35) $(4^4 + 3^3 \times 2^2) \div 5$ has a remainder of ______

(36) If $8 - x = 3$, then $3x - 8 =$ ______

(37) 12 is to 18 as 15 is to ______ (decimal)

(38) $3 + 2 + 5 + 7 + 12 + \ldots + 81 + 131 =$ ______

(39) $2014_8 - 1206_8 =$ ______ $_8$

*(40) $(.125 \times 336)^2 =$ ______

(41) If $75 \times 34 = 15 \times y$, then $y =$ ______

(42) Find the smallest prime number $p > 0$ such that $5p - 4$ is also a prime number. ______

(43) The largest integer x such that $3 + 2x < 15$ is $x =$ ______

(44) $998 \times 997 =$ ______

(45) If $x + y = 7$ and $xy = 2$ then $x^3 + y^3 =$ ______

(46) The sum of the product of the roots taken two at a time of $2x^3 + 4x^2 - 6x = 8$ is ______

(47) $21\frac{3}{7}\% =$ ______ (proper fraction)

(48) $\frac{59}{67} - \frac{10}{11} =$ ______

(49) $54 \times 11 + 99 \times 6 =$ ______

*(50) $\sqrt[3]{26789} \times \sqrt{911} \times 31 =$ ______

(51) The probability of winning is 60%. The odds of losing is ______

(52) How much time has passed from 7:15 am to 3:45 pm the same day? ______ hours

(53) $36^2 + 57^2 =$ ______

(54) ${}_{11}\mathrm{C}_9 =$ ______

(55) Y varies directly with X and $Y = 2$ when $X = 6$. Find Y when $X = 1$. ______

(56) If two dice are rolled, the odds that the sum of the faces is 2, 3, or 12 is ______

(57) $\frac{5!}{3!2!} =$ ______

(58) $\frac{6 \times 7! - 7 \times 6!}{6!} =$ ______

(59) ${}_7\mathrm{P}_4 =$ ______

*(60) $29 \times 30 \times 29 \times 30 =$ ______

(61) $\frac{5}{24} + \frac{5}{48} + \frac{5}{80} + \frac{5}{120} =$ ______

(62) $\frac{5}{9} + 1.8 - \frac{16}{45} =$ ______

(63) $\cos\left(\frac{7\pi}{3}\right) =$ ______

(64) $\cos^2 30° - \sin^2 30° =$ ______

(65) $5^6 \div 4$ has a remainder of ______

(66) $A = \begin{bmatrix} 1 & 2 \\ 5 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 4 \\ 7 & 8 \end{bmatrix}$. Find $|A - B|$. ______

(67) If $(\sqrt{a^3})(\sqrt[3]{a^4}) = (\sqrt[n]{a^k})$, then $k =$ ______

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

(69) If $\log_4 x = -2$, then $x =$ ______

*(70) $645731 \div 1111 =$ ______

(71) If $f(x) = 3x + 5x^2 - 7x^4$, then $f'(1) =$ ______

(72) $143 \times 91 =$ ______

(73) The y-intercept of $y = (2x - 3)^2$ is (h, k) and $k =$ ______

(74) If $5x - 3 \equiv 2 (\text{mod } 6), 0 \leq x \leq 5$, then $x =$ ______

(75) $\int_{-1}^{1} (5x - 1)\,dx =$ ______

(76) $\sum_{1}^{3} (x + 1) =$ ______

(77) If $f(x) = 3x - 5$ and $g(x) = 2x + 1$, then f[g(-1)] = ______

(78) Each face of an icosahedron has ______ sides

(79) A vertical asymptote of $y = \frac{x^2 + 1}{x + 1}$ ______

*(80) $\pi^2 \times \pi^3 \times e =$ ______