Number Sense Exam 003, 12/09/2016

(1) $14 \times 32 = \underline{448}$

(2) $27.5\% = \underline{\frac{11}{40}}$ (proper fraction)

(3) $2001 \times 17 + 3 = \underline{34018}$

(4) $27 \times 25 = \underline{675}$

(5) $2006 \div 9 = \underline{223} \underline{\frac{1}{9}}$ (mixed number)

(6) $21 \times 12 = \underline{252}$

(7) Which is smaller, $\frac{8}{11}$ or $\frac{7}{9}$? =

(8) $(24 + 18) \div 12 \times (3 - 6) = \underline{-11}$

(9) $60\% + .8 - 75\% = \underline{.35}$ (fraction)

*(10) $2007 - 207 + 702 - 7002 = \underline{-670}$

(11) How many positive integers divide 63? ______

(12) $2\frac{3}{4} + 6\frac{7}{8} = \underline{\frac{95}{8}}$ (mixed number)

(13) The GCD of 96 and 56 is \underline{8}

(14) $\frac{5}{4} + \frac{4}{5} = \underline{\frac{21}{20}}$ (mixed number)

(15) $38 \times 74 = \underline{2812}$

(16) The multiplicative inverse of $-7.2$ is ______

(17) $34 \times 46 = \underline{1584}$

(18) $15^2 = \underline{225}$

(19) The GCD of 78 and 114 is \underline{6}

*(20) $7532 \times 1468 = \underline{110018176}$

(21) If $x = 5$ and $y = 2$ then $x^2 - 2xy + y^2 = \underline{1}$

(22) 6 pints is what percent of a gallon? ______ %

(23) $423156 \div 12$ has a remainder of \underline{0}

(24) If $37^2 - 31^2 = 2y$ then $y = \underline{105}$

(25) $43 \times 57 = \underline{2421}$

(26) 2.5 pints = \underline{4} cups

(27) $\sqrt{40} \times 160 = \underline{160}$

(28) The number of positive integral divisors of 48 is \underline{8}

(29) $.5 - .25 - .125 = \underline{\frac{1}{16}}$ (proper fraction)

*(30) $\sqrt{1234} \times 56 = \underline{56}$

(31) Set $A = \{m, e, n, t, a, l\}$ and set $B = \{m, a, t, h\}$. $A \cap B$ contains how many elements? ______

(32) $14443 \times 17 = \underline{245531}$

(33) A ticket costs $5.75. 12 tickets costs $ \underline{69}$

(34) $14443 \times 7 = \underline{1010011}$

(35) $9 - 7 \times (5 + 3) \div 1 = \underline{-17}$

(36) The set $\{T, W, O\}$ has \underline{7} proper subsets

(37) $.5757\ldots = \underline{\frac{5757}{9999}}$ (fraction)

(38) If $x = -3$ and $y = -2$ then $x^2 - 2xy + y^2 = \underline{13}$

(39) If $5x + 7 = 6x - 2$ then $x = \underline{-3}$

*(40) $24 \times 34 \times 44 = \underline{38736}$

(41) $212 \times 311 = \underline{66072}$

(42) $\frac{3}{14} = \underline{\frac{9}{42}}$ %

(43) $14 \times 25 + 12.5 \times 28 = \underline{600}$

(44) $9^6 \times 9^{-4} \div 9^{-2} = 9^k$, then $k = \underline{12}$

(45) $35 \times 85 = \underline{2975}$

(46) If a 4” by 6” picture is enlarged to 6” by 10”, its area is multiplied by \underline{15}

(47) If $4x + 5 > 20$ then $x > \underline{\frac{15}{4}}$
(48) If the area of an equilateral triangle is $3\sqrt{3}$ square inches, then its height is ____________ inches.

(49) Find $x$, if $3x - y = 3$ and $x - 2y = 16$ ____________

*(50) $15^3 \times 5^3 = ____________________________$

(51) find $k > 0$, so that the four digit number $567k$ is divisible by 6. ____________________________

(52) The hypotenuse of a $30^\circ$-$60^\circ$ right triangle is 3 inches long. The shortest leg is ____________ inches.

(53) $412 \times 112 = ____________________________$

(54) When two dice are tossed, the probability that the sum of the faces will be 3 is ____________

(55) How many distinct 5 letter words, real or imaginary, can be made using the letters $s, c, o, t, t$?

(56) $123 \times 301 = ____________________________$

(57) $18\%$ of $266\frac{3}{4}$ is ____________________________

(58) $62 \times 68 = 16 = ____________________________$

(59) Let $|2x + 3| \leq 11$. The least value of $x$ is _____

*(60) The perimeter of $90x^2 + 150y^2 = 13500$ is _____

(61) $31^2 - 33^2 + 35^2 - 37^2 = ____________________________$

(62) $\frac{5}{6} + 1.2 - 2 = ____________________________$

(63) $\sin \left( \frac{13\pi}{6} \right) = ____________________________$

(64) $222_3 \times 2_3 = ____________________________ 3$

(65) $\sin(\arccos .6) = ____________________________$ (decimal)

(66) $111 \times 56 = ____________________________$

(67) The surface area of a sphere with radius 4 is $k\pi$ and $k = ____________________________$

(68) $f(x) = 5x^3 + 4x^2 + 3x - 2$ divided by $x + 1$ has a remainder of ____________________________

(69) The dot product for $u = (2, 1)$ and $v = (4, 3)$ is ____________

*(70) $1^3 + 2^3 + 3^3 + \ldots + 6^3 = ____________________________$

(71) $111 \times \frac{7}{27} = ____________________________$ (mixed number)

(72) If $g(x) = 3x + 2$, then $g^{-1}(-1) = ____________$

(73) $\int_1^2 x^3 \, dx = ____________________________$

(74) $f(x) = x + \frac{1}{x}$ has ____________ asymptotes

(75) If $f(x) = \frac{4x}{5}$, then $f^{-1}(2) = ____________$

(76) $2 \times 3 \times 5 \times 7 \times 11 = ____________________________$

(77) A pair of dice is thrown. The probability that the sum is 7 is ____________

(78) $\log_2 [\log_2 (\log_2 256)] = ____________________________$

(79) The total surface area of a cube with a lateral surface area of $196cm^2$ is ____________ cm$^2$

*(80) $91.666\ldots \times 358 = ____________________________$