Number Sense Exam 019, 4/2/2017

(1) Which is larger: $\frac{7}{12}$ or $\frac{9}{16}$? _____

(2) $3815 \div 8 =$ _____ (decimal)

(3) $\frac{6}{7} - \frac{7}{8} =$ _____

(4) $(9-3) \div 12 \times 6 + 1 =$ _____

(5) Which is smaller: $\frac{5}{7}$ or $\frac{2}{3}$? _____

(6) $\frac{2}{3} - \frac{5}{6} =$ _____

(7) $0.315 =$ _____ %

(8) $25 \times 4.28 =$ _____

(9) $3.2 \times 2.3 =$ _____ (decimal)

*(10) $21347 + 1118 + 2947 + 76 =$ _____

(11) $27 \times 14 - 13 \times 14 =$ _____

(12) $9'x6'x3' =$ _____ cubic yards

(13) $11^3 =$ _____

(14) $96 \times 97 =$ _____

(15) $24 \times 26 - 11 \times 52 =$ _____

(16) $112 \times 14 =$ _____

(17) 45 minus 30% of 50 is _____

(18) $35 \div 1\frac{2}{5} =$ _____

(19) $44 \times 55 =$ _____

*(20) $1234567 \div 1109 =$ _____

(21) If $x + y = 5$ and $y - x = 3$, then $y =$ _____

(22) 86 base ten is equivalent to _____ base 5

(23) If $\left(1\frac{1}{7}\right)^{-1} + (x)^{-1} = 1$, then $x =$ _____

(24) $18^2 - 6^2 =$ _____

(25) $1\frac{3}{4} \times 2\frac{3}{5} =$ _____ (mixed number)

(26) If $f(x) = x^2 + 8x + 16$, then $f(26)$ is _____

(27) $1.1222\ldots =$ _____ (improper fraction)

(28) If $A = 1$, $B = -A$, and $C = A - B$, then $ABC =$ _____

(29) If $x + 5 = 4$, then $x - 3 =$ _____

*(30) 3 gallons − 3 quarts − 3 pints − 3 fl. ounce = _____ fl. ounce.

(31) $54 \times 33 + 33 \times 26 =$ _____

(32) The discriminant of $6x^2 + 7x + 2 = 0$ is _____

(33) $1 + 1 + 2 + 3 + 5 + 8 + \ldots + 89 + 144 =$ _____

(34) If $2\frac{1}{2}$ dozen roses cost \$15.60, what does 5 roses cost? \$ _____

(35) The length of a rectangle is 6 in. and the width is 9 in. The ratio of its perimeter to its area is _____

(36) If $x + (x+3) + (x+6) + (x+9) + (x+12) = 105$, then $(x+6) =$ _____

(37) $\frac{5}{11} - \frac{11}{21} =$ _____

(38) The circumference of circle O is 3π inches. The area of circle O is $k\pi$ square inches. $k =$ _____

(39) $324_6 =$ _____ $_{10}$

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

(41) A right triangle with integer sides has a hypotenuse of 25. The smallest leg is _____

(42) If P is 20% of Q and Q is 25% of R, then P is what percent of R? _____ %

(43) $\dfrac{(11!)(3!)}{(9!)} =$ _____

(44) $\dfrac{6!-4!}{5!} =$ _____ (mixed number)

(45) If $A^3 \div A^k \times A^{-5} = A^6$ and $A > 1$, then $k =$ ____

(46) If the sum of the interior angles of a regular n-gon is 900 degrees then $n =$ _____

(47) $\dfrac{3}{5} - \dfrac{25}{39} =$ _____

(48) The diagonal of a square is $\sqrt{18}$ units. Find the length of the side of the square. _____

(49) $40_5 - 12_5 - 11_5 =$ _____ $_5$

*(50) $29 \times 16 \times 18 =$ _____

(51) The first 3 digits of the decimal of $\dfrac{42}{99}$ is 0. _____

(52) An obtuse triangle has integer sides of 7, x, and 8. The largest value of x is _____

(53) ${}_7\mathrm{C}_4 =$ _____

(54) $\dfrac{3}{4} + \dfrac{1}{2} + \dfrac{1}{3} + \ldots =$ _____

(55) $12\dfrac{1}{2}\%$ of 24 yards = _____ feet

(56) The 11th term of $3, 8, 13, 18, \ldots$ is _____

(57) $\dfrac{2}{5} + \dfrac{1}{3} + \dfrac{5}{18} + \ldots =$ _____

(58) $81 + 54 + 36 + 24 + \ldots =$ _____

(59) $222_4 - 33_4$ _____ $_4$

*(60) $234678 \div 1111 =$ _____

(61) If $\tan^2 A = 5$, then $\sec^2 A - 1 =$ _____

(62) If $\log_x 50 - \log_x 2 = 2$, then $x =$ _____

(63) If five coins are tossed, what is the probability of getting 3 tails and 2 heads? _____

(64) The first 4 digits of the decimal of $\dfrac{17}{90}$ is 0. _____

(65) $99 \times 99 + 99 =$ _____

(66) The graph of $y = -2\cos(x-4) + 1$ has a vertical displacement of _____ units

(67) If $(4+2)! \equiv x (\mathrm{mod} 7)$, where $0 \le x \le 6$, then $x =$

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

(69) The graph of $y = 2 - 3\cos 2(x-5)$ has a horizontal displacement of _____ units

*(70) $3.1\pi \times 2.7e \times 1.6\phi =$ _____

(71) $f(x) = x^3 + 2x^2 - x - 2$. Find $f'(2) =$ _____

(72) $2^8 \div 4^3$ has a remainder of _____

(73) If $f(x) = 2x - 1$, then $f^{-1}(8) =$ _____

(74) $25°\mathrm{C} =$ _____ °F

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

(76) If $f(x) = 3x^2 - 4x + 1$, then $f'(-1) =$ _____

(77) $\dfrac{1}{12} + \dfrac{1}{20} + \dfrac{1}{30} =$ _____

(78) $\displaystyle\int_1^2 x^{-3}\, dx =$ _____

(79) The rectangular coordinates of the polar coordinates $(5\sqrt{2}, \dfrac{\pi}{4})$ are (x, y). $y =$ _____

*(80) 5300 inches/second = _____ miles/hour