Number Sense Exam 068, 9/21/2018

(1) $307 + 703 =$ _____

(2) $21 \times 12 =$ _____

(3) $11 \times 54 =$ _____

(4) $18.75\% =$ _____ (proper fraction)

(5) $50 \times 200.8 =$ _____

(6) $11 \times 252 =$ _____

(7) $2004 - 4002 =$ _____

(8) $(10)(11) + (11)(11) + (12)(11) =$ _____

(9) $13 \times 123 =$ _____

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

(11) $4\frac{2}{3}\% =$ _____ (fraction)

(12) 2 yrds. $\times$ 3 yrds. $\times$ 4 yrds. $=$ _____ cubic ft.

(13) If one dozen balls cost \$25.32, then 2 balls cost \$ _____

(14) $1 + 3 + 5 + 7 + \ldots + 13 =$ _____

(15) $\frac{5}{(2^3)(5^2)} =$ _____ (decimal)

(16) $1515 \div 6$ has a remainder of _____

(17) $\frac{5}{4} + \frac{4}{5} =$ _____ (mixed number)

(18) $(67 \times 213 + 2002) \div 3$ has a remainder of _____

(19) $23 \times \frac{23}{25} =$ _____ (mixed number)

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

(21) The number 72 has how many positive prime integral divisors? _____

(22) If $f(x) = 4x^2 + 4x + 1$, then $f(.4) =$ _____

(23) The discriminant of $2x^2 - 5x + 3 = 0$ is _____

(24) How many minutes are there from 11:42am to 9:10pm? _____ min.

(25) If $f(x) = |x - 8| + |8 - x|$ then $f(.5) =$ _____

(26) $200_7 =$ _____ $_{10}$

(27) $\frac{2}{3}$ of a gallon = _____ cubic inches

(28) $85 \times 85 =$ _____

(29) $57^2 - 58^2 =$ _____

*(30) $783209 \div 247 =$ _____

(31) $4^2 + 3^3 + 2^4 =$ _____

(32) $\sqrt[3]{64 \times 8} =$ _____

(33) $54843 \div 101 =$ _____

(34) How many positive integers less than 20 are relatively prime to 20? _____

(35) $14443 \times 7 =$ _____

(36) The set $\{3, 4, 5, 6, 7\}$ has _____ subsets

(37) How many subsets containing 3 elements does the set $\{p, o, l, a, r\}$ have? _____

(38) The length of a diagonal of a square is $\sqrt{18}$ cm. The perimeter of the square is _____ cm

(39) 39% of _____ is 12% of 52.

*(40) $19 \times 23 \times 44 =$ _____

(41) $331 \times 122 =$ _____

(42) $14 \times 16 =$ _____

(43) A nonagon has _____ distinct diagonals

(44) The side opposite 30° in a right triangle is $2\frac{3}{8}$ cm. The hypotenuse is _____ cm

(45) $11 \times \dfrac{13}{15} =$ _____ (mixed number)

(46) The diagonals of a rhombus are $22''$ and $30''$. The area is _____ square inches.

(47) $14443 \times 29 =$ _____

(48) Find the units digit of 17^6. _____

(49) The point $(-4, 5)$ is reflected across the origin to point (h, k). Find k. _____

*(50) The volume of a sphere with a diameter of 12 inches is _____ cubic inches.

(51) $555 \times \dfrac{6}{37} =$ _____

(52) The midpoint of the segment with the endpoints $(x, 3)$ and $(5, y)$ is $(2, 4)$. Find $x + y$. _____

(53) Find the 5th term of the geometric sequence, $27, 18, 12, 8, \ldots$ _____

(54) Find the simplified coefficient of the sixth term in the expansion of $(2x - 1)^6$. _____

(55) The area of $4x^2 + 9y^2 = 36$ is $k\pi$. $k =$ _____

(56) The legs of a right triangle are 3 and 4. The length of the altitude to the hypotenuse is _____

(57) $\dfrac{1}{5} + \dfrac{1}{25} + \dfrac{1}{125} + \ldots =$ _____ (fraction)

(58) The area of $x^2 + 4y^2 = 4$ is $k\pi$. $k =$ _____

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

*(60) $12^4 \div 4^4 \times 7^2 =$ _____

(61) The volume of a right cylinder with a radius of $6''$ and a height of $9''$ is _____ π cu. in.

(62) If $\sec x = 2$ then the value of $\tan^2 x$ is _____

(63) $2 \sin 15^\circ \sin 75^\circ =$ _____

(64) The greatest integer function is written as $f(x) = [x]$. Find $[\pi + e + \phi]$. _____

(65) The fifth pentagonal number is _____

(66) The product of the coefficients of $(2a + 2b)^2$ is _____

(67) $112 \times 111 =$ _____

(68) $987 \times 9 + 5 =$ _____

(69) $f(x) = x^2 + 2x + 1$ and $g(x) = x^3$. $f(g(-2)) =$ _____

*(70) $(3\pi)^4 =$ _____

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

(72) If $f(x) = 4x^2 - 7x - 5$, then $f''(3) =$ _____

(73) $\displaystyle\int_0^4 (x - 1)\, dx =$ _____

(74) The rectangular coordinate $(\sqrt{2}, -\sqrt{2})$ has a polar coordinate (r, θ). $\theta =$ _____ $^\circ$

(75) Find the slope of the line tangent to $y = 2x^2 + 2x - 3$ at $(2, 9)$. _____

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

(77) $(-4, 120^\circ)$ are polar coordinates for the rectangular coordinates (x, y). Find x. _____

(78) The sum of the first 9 terms of the Fibonacci characteristic sequence $, 1, 4, 5, 9, 14, 23, \ldots$ is _____

(79) If $f[g(x)] = 6x + 5$ and $f(x) = 2x + 3$, then $g(x) =$ _____

*(80) $9\dfrac{3}{5} \div 96 \times 36550 =$ _____