Number Sense Exam

(1) $\dfrac{6}{7} - \dfrac{7}{8} =$ _____

(2) $637 \div 9 =$ _____ (mixed number)

(3) $444 \div 9 =$ _____

(4) $244 \times 25 =$ _____

(5) $14^2 =$ _____

(6) $20.09 + 2.010 =$ _____ (decimal)

(7) $2 + 0 \times 0 - 1 =$ _____

(8) $95 \times 105 =$ _____

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

*(10) $188 + 818 + 881 - 118 =$ _____

(11) Which is smaller: $1\dfrac{1}{3}$ or 1.3? _____

(12) The sum of the proper divisors of 80 is _____

(13) 21 is _____ % less than 35

(14) $713 - 317 =$ _____

(15) $\dfrac{7}{12} =$ _____ % (mixed number)

(16) The multiplicative inverse of 11 is _____

(17) $2 + 4 + 6 + 8 + \ldots + 22 =$ _____

(18) MMXX $\div$ V = _____ (Arabic Numeral)

(19) The GCD of 78 and 114 is _____

*(20) $\sqrt{440 \times 439} =$ _____

(21) If 4 pencils cost \$8.88, then 10 pencils cost \$ ____

(22) Find $f(3)$ if $f(x) = 9x^2 - 30x + 25$. _____

(23) $(31 \times 6 - 17) \div 8$ has a remainder of _____

(24) $7^3 =$ _____

(25) $\sqrt[3]{-1331} =$ _____

(26) 12% of 63 is 14% of _____

(27) $2 + 1 + 3 + 4 + 7 + \ldots + 29 =$ _____

(28) $13 \times 542 =$ _____

(29) The 11th triangular number is _____

*(30) 41.6% of 1438 = _____

(31) If $x = 5$ and $y = -2$, then $x^2 + 2xy + y^2 =$ ____

(32) 15% of _____ is 21% of 35.

(33) $539 \times 13 =$ _____

(34) $\sqrt{196 \times 256} =$ _____

(35) If x is to 4 as 27 is to 36, then $x =$ _____

(36) If $A = 4, B = 3$ and $C = 2$, then

$BC^A - AC^B =$ _____

(37) $735246 \div 18$ has a remainder of _____

(38) The product of the prime integers less than 9 is __

(39) $27 + 6 + 1 =$ _____ base 3.

*(40) $316 \times 2013 =$ _____

(41) $101110_2 =$ _____ $_8$

(42) $22 \times 4! + 32 \times 3! =$ _____

(43) The first 4 digits of $\dfrac{245}{990}$ is 0. _____

(44) If $3x + y = 8$ and $2x - y = 1-$ then $x =$ _____

(45) The y-intercept of the line $3x = 1 - 2y$ is (h, k).

Find $h + k$. _____

(46) If a $4''$ by $6''$ picture is enlarged to $6''$ by $10''$, its

area is multiplied by _____

(47) $38 \times 11 + 33 \times 24 =$ _____

(48) The largest integer value x such that $7x + 5 \leq 3$ is _____

(49) The measure of an exterior angle of regular n-gon is 45°. $n =$ _____ sides

*(50) $1212 \times 9010 \div 111 =$ _____

(51) A regular polygon has an interior angle of 144°. How many sides does the polygon have? _____

(52) The expansion of $(3x + 4y)^5$ has _____ terms

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

(54) $(35_9 + 48_9) \div 8$ has a remainder of _____

(55) $_5C_3 =$ _____

(56) $12 + 9 + 6.75 + \ldots =$ _____

(57) The next term of the sequence $\dfrac{2}{3}, \dfrac{4}{5}, \dfrac{6}{7}, \dfrac{8}{9}, \ldots$ is _____

(58) $\dfrac{6! + 2!}{4!} =$ _____ (mixed number)

(59) If $xy = 1$ and $x + y = -2$, then $x^3 + y^3 =$ _____

*(60) The area of $14^2 + 16y^2 = 224 =$ _____

(61) A cube has edges of 8 in. Its surface area is _____ sq. in.

(62) $43_5 \times 2_5 =$ _____ $_5$

(63) $2\sin 165° \cos 165° =$ _____

(64) The distance between the line $3x + 4y = 5$ and the point $(1, 1)$ is _____

(65) 2.5 circular rotations = _____ degrees

(66) Let $A = \begin{bmatrix} 3 & 1 \\ -2 & 2 \end{bmatrix}$. The determinant of A is _____

(67) How many 3-digit integers end in a 5? _____

(68) $52^2 =$ _____

(69) $\det \begin{bmatrix} 7 & 4 \\ 3 & 5 \end{bmatrix} =$ _____

*(70) $13 \times 14 \times 15 \times 16 =$ _____

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

(72) $123 \times 321 =$ _____

(73) Write the sum using numbers: three and one-fifth billion plus twenty million. _____

(74) Find k if $\det \begin{bmatrix} k & 9 \\ 2 & 2 \end{bmatrix} = 6.$ $k =$ _____

(75) The sum of the first eleven terms of the Fibonacci sequence 2, 4, 6, 10, 16, 26, ... is _____

(76) If $f(x) = \sqrt{2 - 5x}$, where $x, f(x) \in \{\text{Reals}\}$ then the range of $f(x)$ is $\{f(x) \mid f(x) \geq$ _____ $\}$

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

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

(79) A number is randomly drawn form the set $\{1, 2, 3, 4, 5\}$. What is the probability that the number drawn is a prime number? _____ %

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