Number Sense Exam 100, 1/7/2021

(1) $\frac{3}{2} - \frac{1}{6} =$ ________________  (mixed number)

(2) $12 \times 22 + 16 \times 22 =$ ________________

(3) 40% of $(4 + \frac{1}{4}) =$ ________________

(4) $3.2 \times 2.3 =$ ________________  (decimal)

(5) $15 \times 28 =$ ________________

(6) 7.5% = ________________  (proper fraction)

(7) $31 \times 29 =$ ________________

(8) $9 - 12 \times 6 \div 3 =$ ________________

(9) $2.5 \times 48 =$ ________________

(10) $1437 + 2019 - 1278 + 231 =$ ________________

(11) $123 \times 8 + 3 =$ ________________

(12) 17 is what % of 68? ________________  %

(13) $\frac{3}{4} \times \frac{2}{3} =$ ________________

(14) CCCXXXIC = ________________  (Arabic Numeral)

(15) MDII + CX = ________________  (Arabic Numeral)

(16) Which is larger: $3 \frac{1}{6}$ or 3.16? ________________

(17) MMLIII + CCXIII = ________________  (Arabic Numeral)

(18) $1 + 2 + 3 + 4 + \ldots + 24 + 25 =$ ________________

(19) $12^3 =$ ________________

(20) $\sqrt{173468} =$ ________________

(21) The sum of three consecutive integers is 63. The middle integer is ________________

(22) The sum of the roots of $2x^2 - 4x - 3 = 0$ is ________________

(23) $33^2 + 11^2 =$ ________________

(24) $\frac{12}{13} - \frac{13}{12} =$ ________________

(25) $3663 \div 111 =$ ________________

(26) $(41 \times 34 - 14) \div 8$ has a remainder of ________________

(27) $\sqrt{3375} =$ ________________

(28) Set $A$ has 4 elements, set $B$ has 7 elements, and $A \cap B$ has 3 elements, then $A \cup B$ has ___ elements

(29) The set $\{l, i, n, e, a, r\}$ has ___ 4-elements subsets

(30) $325 \times 2017 =$ ________________

(31) If $3x + 5 = 1$, then $6x - 1 =$ ________________

(32) If $3x - 4 = 7 + 2x$, then $x =$ ________________

(33) $123 \times 8 + 3 =$ ________________

(34) If $f(x) = 9x^2 + 12x + 4$, then $f(-2) =$ ________________

(35) $(24 \times 12 + 2 \times 11) \div 7$ has a remainder of ________________

(36) The sum of the roots of $x^2 + x = 20$ is ________________

(37) How many positive natural numbers less than or equal to $30$ are relatively prime to $30$? ________________

(38) If $8 \frac{1}{3}$% sales tax on an item is $0.18$, what is the price of the item before tax? $\$_______________

(39) $(3 \times 19 + 20 \times 16) \div 6$ has a remainder of ________________

(40) 20 hours + 30 minutes + 40 seconds

__________________ seconds

(41) The $y$-intercept of $6x - 2y = 8$ is $(x, y)$. $y =$ ________________

(42) $114 \times 411 =$ ________________

(43) $7 \times \frac{7}{10} =$ ________________  (mixed number)

(44) A circle of radius 1.375" is inscribed in a square.

The perimeter of the square is ________________ in.
(45) The sum of the integral values of $x$ such that $a + |x - 2| \leq 3$ is ____________

(46) $45 \times 65 =$ ________________

(47) Let $3(i)^4(i)^5 = a \sqrt{b}$. Find $a + b$. ________________

(48) An exterior angle of a regular hexagon has a measure of ________________ degrees

(49) A regular hexagon has _____ distinct diagonals

*(50) $4^2 \times 3^4 \times 2^5 =$ ________________

(51) $53 \times 53 + 50 \times 50 - 3 \times 3 =$ ________________

(52) $271 \times 314 =$ ________________

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

(54) The number of distinct diagonals of a convex pentagon is ________________

(55) The parabola $y = x^2 - 2x + 1$ has a vertex at $(h, k)$. Find $h$. ________________

(56) The simplified coefficient of the $x^2y^2$ term in the expansion of $(2x + y)^4$ is ________________

(57) If $\log_3 x^3 = 1.5$, then $x =$ ________________

(58) $2 + 3 + 4 + 5 + \ldots + 24 =$ ________________

(59) If $4 \log_9 k = 2$, then $k =$ ________________

*(60) $34 \times 45 + 54 \times 43 =$ ________________

(61) $\cos(480^\circ) =$ ________________

(62) $9^8 \div 7$ has a remainder of ________________

(63) $33_6 \times 3_6 =$ ________________ 6

(64) The smaller root of $9x^2 - 12x - 5 = 0$ is ________________

(65) Let $\frac{2 - 3i}{1} = a + bi$. Find $a + b$. ________________

(66) How many ways can 3 people be seated in a row of 5 chairs? ________________

(67) $\sin(\arccos .6) =$ ________________ (decimal)

(68) The sum of the coefficients of $(x + y)^4$ is ________________

(69) The sum of the coefficients of $(x + y)^5$ is ________________

*(70) $4^4 \times 16^3 \div 16^2 =$ ________________

(71) If $\det \begin{bmatrix} -4 & 6 \\ 8 & 4 \end{bmatrix} = 9$, then $x =$ ________________ (decimal)

(72) $\int_0^5 (5 - x) \, dx =$ ________________

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

(74) Find $x, 1 \leq x \leq 4$, if $2x + 3 \equiv 3(\mod 6)$. ________________

(75) $2x^2 - 4x + 1 \div (x - 2)$ has a remainder of ________________

(76) Change 0.31 base 4 to a base 10 fraction. ________________

(77) Find $x, 0 \leq x \leq 4$, if $16 + x \equiv 4(\mod 5)$. $x =$ ________________

(78) The volume of a circular cylinder with height 5 in. and diameter 3 in. is $k\pi$ cu. in. and $k =$ ________________

(79) $\int_1^4 x(-2) \, dx =$ ________________

*(80) $(3.166 \ldots) \div (38) \times (13^3) =$ ________________