(1) $729 \div (9(39 - 12)) =$ _____

(2) $42 \times 126 =$ _____

(3) $73^2 =$ _____

(4) $76413 + 61748 - 14679 =$ _____

(5) $978 \times 15 =$ _____

(6) $118^2 - 68^2 =$ _____

(7) $233 \times 317 =$ _____

(8) $17 \times 53 + 34 =$ _____

(9) $1 + 2^2 + 4^2 + 5^2 + 7^2 =$ _____

(10) $3\frac{12}{17} + 5\frac{2}{13} =$ _____(mixed number)

(11) $80 \div 27 + 298 \div 27 =$ _____

(12) $138^2 =$ _____

(13) The GCD of 51, 85, and 38 is _____

(14) $21.25\% =$ _____(proper fraction)

(15) Which is smaller, $-\frac{13}{37}$ or $-\frac{5}{14}$? _____

(16) $(36 + 59 + 24) \div 8$ has a remainder of _____

(17) $5\frac{7}{8} \div 3\frac{1}{8} =$ _____(improper fraction)

(18) $20 \times 163.5 =$ _____

(19) $21^2 + 12^2 - 129 =$ _____

(20) 7 in. $\times$ 24 in. $\times$ 36 in. = _____cubic feet

(21) $105 \div 0.3125 =$ _____

(22) $76 \times 7\frac{1}{4} =$ _____

(23) $86716 \div 4 =$ _____

(24) $29 \times 87 =$ _____

(25) How many unique whole numbers will divide evenly into 724? _____

(26) DCCXXIV + CLXIII = _____(Arabic numeral)

(27) 28% of 80 is 40% of _____

(28) $\sqrt{9216} =$ _____

(29) $14 \div 5.\overline{3333} =$ _____(improper fraction)

(30) $|22 - |32 - 23|| =$ _____

(31) $18^3 =$ _____

(32) $\sqrt[3]{12 \times 9216} =$ _____

(33) $3^5 + 2^9 - 7^3 =$ _____

(34) Find the slope of the line perpendicular to the line which contains the points $(-2, -1)$ and $(12, -7)$. _____

(35) $0.25\overline{2222} =$ _____(proper fraction)

(36) $17^2 \times 68^3 \div 34^4 =$ _____

(37) $3 + 1 - 1 - 3 - 5 - ... - 19 =$ _____

(38) $14641^{3/4} =$ _____

(39) $543_7 - 246_7 =$ _____ $_7$

(40) $(3)^{-3} + (5)^{-2} =$ _____

(41) The largest prime factor of 7338 is _____

(42) $10! \div 6! - 7! \div 6! =$ _____

(43) $1110_2 + 1101_2 =$ _____ $_2$

(44) CLXVI + LXXI = _____(Roman numeral)

(45) The smallest root of $x^3 - 3x^2 - 22x + 24$ is _____

(46) $_{10}C_7 =$ _____

(47) $\sqrt[3]{9 \times 31 + 64} =$ _____

(48) If $(3 - 4i)(1 - 6i) = a + bi$, then $a + b =$ _____

(49) The geometric mean between 6 and 24 is _____

(50) The largest integer n such that $\pi \times n < 100$ is _____

(51) $2021_4 =$ _____ $_{10}$

(52) $11! \div 8! - 10! \div 7! =$ _____

(53) The multiplicative inverse of -12.35 is _____

(54) Give the hundreds digit of 4^7 _____

(55) How many non-empty proper subsets does a set with 12 elements have? _____

(56) $(5 - 2i)(1 + i)(2 - 3i)(3 + 4i) =$ _____

(57) $441 \times 289 =$ _____

(58) Give the value of $\sqrt{1703}$ rounded to the nearest whole number. _____

(59) Find $7x$ if $\log_x 8 = 0.\overline{3333}$. _____

(60) $19^2 \div (12.\overline{3333})^2 \times 37^2 =$ _____

(61) $9\frac{8}{13} \div 7\frac{8}{13} =$ _____(mixed number)

(62) Give the minimum value of the function
$f(x) = 4 - 3x + 2x^2$ _____

(63) 36% of $22\frac{7}{12}$ is _____

(64) Solve for x: $\sqrt{x} - \sqrt{117} = \sqrt{52}$ _____

(65) $|9 + 40\mathrm{i}| =$ _____

(66) $34_5 =$ _____ ${}_9$

(67) The volume of a cube with a face-diagonal of length of 8 is _____

(68) $\langle -1, 5 \rangle \cdot \langle 3, 2 \rangle =$ _____

(69) $\begin{vmatrix} 7 & 19 \\ -3 & 4 \end{vmatrix} =$ _____

(70) Find $f^{-1}\left(\frac{\pi}{2}\right)$ if $f(x) = \cos^2(x) + 2x - \frac{1}{2}$ _____

(71) $1 - \frac{1}{4} + \frac{1}{16} - \frac{1}{64} + \cdots - \frac{1}{1024} =$ _____

(72) ${}_7\mathrm{P}_3 \times {}_5\mathrm{P}_2 =$ _____

(73) Find $f(f(1))$ for $f(x) = \dfrac{2x - 1}{x^2 + x - 3}$ _____

(74) $2\cos\left(\arctan(\sqrt{3}) - \mathrm{arccsc}(2)\right) =$ _____

(75) $8 \times 24 - 26 \div 65 \times 35 =$ _____

(76) $9^9 \div 6$ has a remainder of _____

(77) $\cos^2\left(\frac{\pi}{8}\right) - \sin^2\left(\frac{\pi}{8}\right) =$ _____

(78) $|(2 + \mathrm{i})(6 - 7\mathrm{i})|^2 =$ _____

(79) The product of the solutions to $\left|x^2 - 4\right| = 2$ is _____

(80) $\tan\left(\frac{2\pi}{3}\right) =$ _____(round to tenths place)

(81) The sum of the prime factors of 3570 is _____

(82) $\displaystyle\lim_{x \to 4} \frac{3x - 12}{x^2 - 16} =$ _____

(83) The sum of the first 7 triangular numbers is _____

(84) $243_8 + 1433_5 =$ _____ ${}_{10}$

(85) If $13x + 3 \equiv 7 \pmod 9$, the smallest positive integer value of x is _____

(86) $\cos\left(\arctan\left(\frac{8}{15}\right)\right) =$ _____

(87) The Greatest Integer Function is written as $f(x) = [x]$. Find $\left[\sin\left(\frac{5\pi}{3}\right)\right]$ _____

(88) $\sqrt{245025} =$ _____

(89) The $x-$value of the rectangular coordinates for the point in polar $\left(3, -\frac{\pi}{6}\right)$ is _____

(90) If $xy = 15$ and $x - y = 4$, then $x^2 + y^2 =$ _____

(91) Solve for x: $\log_x 486 - \log_x 2 = 5$ _____

(92) If $f(x) = x^3 + 2x^2 - x + 11$, then $f''(-2) =$ _____

(93) $\cos^2\left(\frac{7\pi}{8}\right) + \sin^2\left(\frac{7\pi}{8}\right) =$ _____

(94) If $g(x) = \sqrt{x + 1} + 6x^4$, $g'(3) =$ _____

(95) The graph of $y = \dfrac{x^2 - 5x - 6}{x^2 - 1}$ has how many vertical asymptotes? _____

(96) The largest even prime less than 10! is _____

(97) For $f(x) = x\cos(x)$, $f'''(0) =$ _____

(98) $\displaystyle\int_{-1}^{2} x^3\,dx =$ _____

(99) $(987654321 - 9) \div 8 =$ _____

(100) The arithmetic mean of 81, 17, and _____ is 41.

(101) $\displaystyle\lim_{x \to \infty} \arctan\left(\frac{x}{3}\right) =$ _____

(102) $\displaystyle\lim_{x \to -4} \frac{\sin(\pi x)}{x^2 - 16} =$ _____

(103) $\sqrt{11^2 + 60^2} =$ _____

(104) Observe: $10! \div (6!)^2 = 7$. So $12! \div (6!)^2 =$ _____

(105) $\displaystyle\int_{0}^{1} y \times y^2 \times y^3 \times \cdots \times y^7\,dy =$ _____

(106) $20^3 - 19^3 =$ _____

(107) $254_8 \times 45_8 =$ _____ ${}_8$

(108) The harmonic mean of $\frac{1}{2}$, 2 and 4 is _____

(109) The angle between $\langle 3, 3 \rangle$ and $\langle 5, 0 \rangle$ is ——————

(110) Given $A = \begin{bmatrix} \frac{1}{2} & \frac{\sqrt{3}}{2} & 0 \\ -\frac{\sqrt{3}}{6} & \frac{1}{6} & 0 \\ 0 & 0 & 3 \end{bmatrix}$, we have $\left(A^{-1}\right)_{1,2} = $ ——

(111) The area of an ellipse with major axis length 4 and minor axis length $\frac{1}{2}$ is ——————————

(112) The slope of the tangent line at the point $(3, 4)$ on the circle of radius 5 centered at the origin is ——————

(113) For $f(x) = x^3 + x$, $\left(f^{-1}\right)'(10) = $ ——————

(114) $17 - 12 \div 2 \times 6 = $ ——————————

(115) The largest value of x which satisfies $\dfrac{x^2 - 18x - 63}{x - 6} \le 0$ is ——————————————

(116) The geometric mean of 8, 27, and ——————— is 30.

(117) The x-value of the point $(-7, 2)$ rotated about the origin by $135°$ counter-clockwise is ——————

(118) $19276333 \equiv $ ———————————(mod 3)

(119) $11^5 = $ ————————————

(120) $(23^3 + 2^3) \div (23^2 - 2 \times 23 + 2^2) = $ ——————

END OF EXAM!
Do not use this space for scratch work!