

CALCULUS DAY 1 REVIEW

Put each linear equation in slope-intercept form ($y = mx + b$).

① $y - 4 = 3(x - 2)$

② $y + 3 = -\frac{2}{3}(x - 6)$

③ $5x - 4y = 20$

Write the equation of the line in point-slope form: $y - y_1 = m(x - x_1)$ given the following:

④ slope = 2 ; Point on line $\Rightarrow (3, 4)$

⑤ $P_1(-2, 3)$; $P_2(4, -7)$

Solve the following equations:

⑥ $2(x - 1) + 3x + 5 = 7x - 10$

⑦ $\frac{3x + 10}{4} = 5x - 8$

⑧ $x^2 + 5x + 4 = 0$

⑨ $x^2 + 8x - 4 = 0$

⑩ $2x^2 + 5x - 3 = 0$

⑪ $2x^2 - 10x + 3x - 15 = 0$

⑫ $\frac{x^2 - 3}{x + 2} = \frac{1}{4}$

Find the value given:

$f(x) = 3x^2 + 2$; $g(x) = \sqrt{x + 7}$; $h(x) = e^{2x + 1}$

⑬ $g(f(3))$

⑮ $h(f(g(-6)))$

⑭ $f(g(-3))$

Find the following given the function:

$f(x) = \frac{-3x^2 - 7x - 2}{x^2 - x - 6}$

⑯ x-intercepts

⑰ Holes

⑱ y-intercept

⑲ Horizontal

⑳ Vertical Asymptotes

Asymptote

㉑ Add & simplify: $\frac{a}{a-1} + \frac{5a+5}{a^2-1}$ if possible

Evaluate & simplify if possible:

㉒ $\sqrt{4}^5$ ㉓ $27^{4/3}$ ㉔ $(5/4)^{-2}$ ㉕ $(25/36)^{-3/2}$

㉖ $5^{2x-5} = 125^x$

㉗ $\log_6(5x - 7/2) + \log_6(4) = 1$

㉘ $\ln(9x - 12) - \ln(3) = 6$

Evaluate & simplify using Unit Circle:

㉙ $\sin(5\pi/4)$ ㉚ $\cos(2\pi/3)$

㉛ $\tan^{-1}(\sqrt{3})$ ㉜ $\sin^{-1}(\sin(7\pi/6))$