Put your name here: Key Period:

AP Calculus AB: 1.1 Algebra 1 Review

Find the equation, in point-slope form, of the line formed by two points.

1) $(-4,-8),(2,7)$

$y=\frac{5}{2}x+2$

2) $(-3,\frac{-3}{2}),(4,-5)$

$m=\frac{y_2-y_1}{x_2-x_1}=\frac{-5-\frac{-3}{2}}{4-3}=\frac{\frac{-10}{2}+\frac{3}{2}}{4+3}=\frac{\frac{-7}{2}}{\frac{7}{1}}=\frac{-7}{14}=\frac{-1}{2}$

$y-y_1=m(x-x_1)$

$y-(-5)=-\frac{1}{2}(x-4)$

$y+5=-\frac{1}{2}x+2$

$\boxed{y=-\frac{1}{2}x-3}$

3) $(0,6),(5,\frac{8}{3})$

$y=-\frac{2}{3}x+6$

Solve for the missing variables.

4) $10(x+5)-20x=5x-(2x+28)$

$x=6$

5) $x^2+4x-10=2x+5$

$-2x-5 \quad -2x-5$

$x^2+2x-15=0$

$(x-3)(x+5)=0$

$\boxed{x=3 \quad x=-5}$

6) $2(x^2+3x)=-x+15$

$x=-5 \quad x=\frac{3}{2}$

7) $\frac{\ln(x)+6}{2}=3$

$\ln(x)+6=6$

$\ln(x)=0$

$x=e^0$

$\boxed{x=1}$

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Solve for the missing variables.

8) $\frac{e^x+5}{2} = 3$

$x = 0$

9) $\ln(5x) = 0$

$x = \frac{1}{5}$

10) $e^{2x+4} = 1$

$\ln(e^{2x+4}) = \ln(1)$

$2x+4 = 0$

$2x = -4$

$x = \frac{-4}{2} = \boxed{-2}$

Simplify each of the following equations

11) $\frac{x^2-4x-12}{x^2+7x+10}$

$\frac{x-6}{x+5}$

12) $\frac{3x^2+2x-21}{2x^2+11x+15}$

$\frac{3x-7}{2x+5}$

13) $\frac{x^2-4}{2x^2+8x+8}$

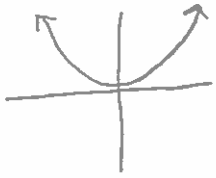
$\frac{x-2}{2(x+2)}$

14) $\frac{x^4-16}{(x^2+4)(2x^2-x-10)} = \frac{(x^2-4)(x^2+4)}{(x^2+4)(x+2)(2x-5)}$

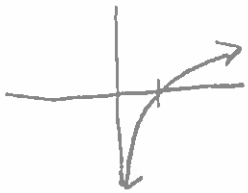
$\frac{x^2-4}{(x+2)(2x-5)} = \frac{(x-2)(x+2)}{(x+2)(2x-5)} = \boxed{\frac{x-2}{2x-5}}$

Sketch the graph for each of the following equations (Draw your own x-y axis)

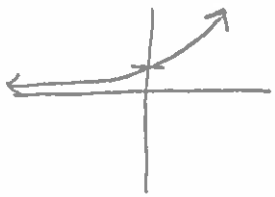
15) $y = x^2$



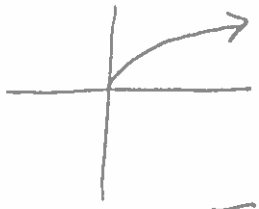
16) $y = \ln(x)$



17) $y = e^x$

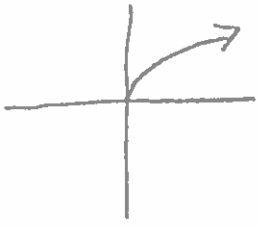


18) $y = \sqrt{x}$

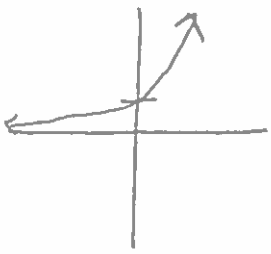


19) $y = x^{1/2}$

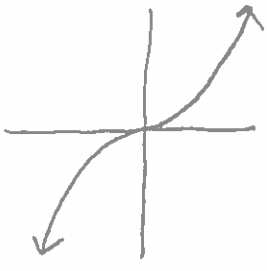
$y = \sqrt{x}$



20) $y = 3^x$



21) $y = x^3$



22) $y = x^{1/3} = \sqrt[3]{x}$