Algebra 2 Bellwork Tuesday, February 9, 2016

1. Solve this rational function: $\frac{2}{x-4} - \frac{14}{x^2-x-12} = \frac{x}{x+3}$,

$x =$

2. Find the x and y intercepts for each rational function.

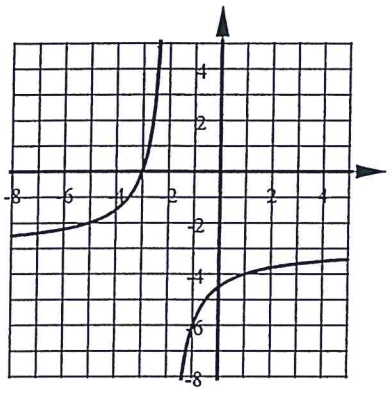
a) $y = \frac{x^2-3x-4}{x^2-1}$

$x-int =$ $y-int =$

b) $y = \frac{x^2+16}{x^2+4x}$

$x-int =$ $y-int =$

3. Write the equation of this graph which is a transformation of $y = \frac{3}{x}$



$y =$

Answers

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(1) $\frac{2}{x-4} - \frac{14}{x^2-x-12} = \frac{x}{x+3}$

$\frac{(x+3)}{(x+3)} \cdot \frac{2}{x-4} - \frac{14}{(x-4)(x+3)} = \frac{x}{x+3} \cdot \frac{(x-4)}{(x-4)}$

$\frac{2x+6}{(x+3)(x-4)} - \frac{14}{(x-4)(x+3)} = \frac{x^2-4x}{(x+3)(x-4)}$

$2x+6-14 = x^2-4x \longrightarrow 0 = x^2-6x+8$

-8

$0 = (x-4)(x-2)$

$x = 4, 2$ **$x=2$**

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(2) a) $\frac{x^2-3x-4}{x^2-1} = \frac{(x-4)(x+1)}{(x+1)(x-1)}$

x-int = 4

y-int = $\frac{-4}{-1} = 4$

($x=-1$ is a hole)

b) $\frac{x^2+16}{x^2+4x}$ ← no real zeros

x-int = NONE

y-int = $\frac{16}{0}$ = NONE

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(3) HA $y = -3$ → 3 down

VA $x = -2$ → 2 left

Quadrants II & IV → upside down

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