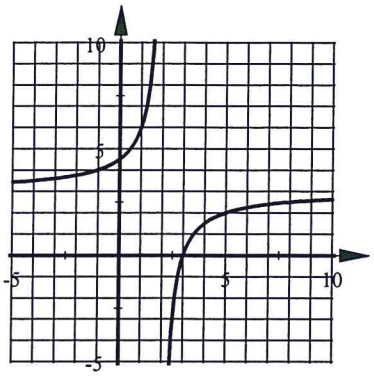
Algebra 2 Bellwork Friday, February 5, 2016

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



2. Solve this rational equation:

$$\frac{2x}{x+4} - \frac{3}{x-2} = \frac{6x-30}{x^2+2x-8}$$

For 3 and 4 state the points of discontinuity, if any, and classify them as either Holes or Vertical Asymptotes.

3. $y = \frac{2x^3+2x^2-60x}{3x^3+16x^2-12x}$

Points of discontinuity:

VA: Holes:

4. $y = \frac{x^2+7x+12}{2x^2+6}$

Points of discontinuity:

VA: Holes:

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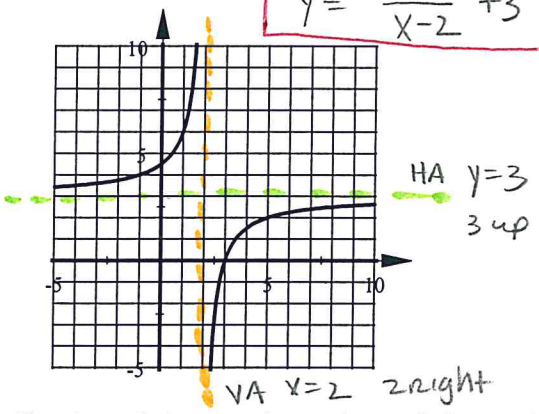
ANSWERS

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

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



2. Solve this rational equation:

$$\frac{2x}{x+4} - \frac{3}{x-2} = \frac{6x-30}{x^2+2x-8}$$

$(x+4)(x-2)$

$x = \frac{9}{2}$

$$\frac{(x-2)}{(x-2)} \cdot \frac{2x}{x+4} - \frac{3}{x-2} \cdot \frac{(x+4)}{(x+4)} = \frac{6x-30}{(x+4)(x-2)}$$

$2x^2 - 4x - 3x - 12 = 6x - 30$

$2x^2 - 7x - 12 = 6x - 30$

$2x^2 - 13x + 18 = 0$

$(2x-9)(x-2) = 0$

$x = \cancel{2}, \frac{9}{2}$

For 3 and 4 state the points of discontinuity, if any, and classify them as either Holes or Vertical Asymptotes. $2x(x^2+x-30)$

3. $y = \frac{2x^3+2x^2-60x}{3x^3+16x^2-12x} = \frac{2x(x+6)(x-5)}{x(3x-2)(x+6)}$

$x(3x^2+16x-12)$

Points of discontinuity: $x = 0, \frac{2}{3}, -6$

VA: $x = \frac{2}{3}$ Holes: $x = 0, -6$

4. $y = \frac{x^2+7x+12}{2x^2+6}$ NO Real zeros

Points of discontinuity: NONE

VA: Holes: