Algebra 2 Bellwork Thursday, February 5, 2015

Find all points of discontinuity, if any, for each rational function and classify each as a Hole or a Vertical Asymptote.

1. $y = \dfrac{x^2 - 4}{x^2 - 3x - 10}$

VA:

Holes:

2. $y = \dfrac{x^2 - 4x - 32}{x^3 + 4x^2 - 9x - 36}$

VA:

Holes:

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

VA:

Holes:

4. $y = \dfrac{x^2 + 7x + 12}{x^2 + 3}$

VA:

Holes:

Algebra 2 Bellwork Thursday, February 5, 2015 Answers

Find all points of discontinuity, if any, for each rational function and classify each as a Hole or a Vertical Asymptote.

1. $y = \dfrac{x^2 - 4}{x^2 - 3x - 10} = \dfrac{(x+2)(x-2)}{(x-5)(x+2)}$

VA: $x = 5$

Holes: $x = -2$

2. $y = \dfrac{x^2 - 4x - 32}{x^3 + 4x^2 - 9x - 36} = \dfrac{(x-8)(x+4)}{(x-3)(x+3)(x+}$

	x	$+4$
x^2	x^3	$+4x^2$
-9	$-9x$	-36

VA: $x = \pm 3$

Holes: $x = -4$

3. $y = \dfrac{2x^3 + 2x^2 - 60x}{3x^3 + 16x^2 - 12x} = \dfrac{2x(x^2 + x - 30)}{x(3x^2 + 16x - 12)} = \dfrac{2x(x+6)(x-5)}{x(3x-2)(x+6)}$

VA: $x = 2/3$

Holes: $x = 0, -6$

4. $y = \dfrac{x^2 + 7x + 12}{x^2 + 3}$ → ALWAYS POS! (never = 0)

VA: } NONE

Holes: }