Algebra 2 Bellwork Tuesday, December 17, 2013

Find any points of discontinuity for each rational function and identify them as either holes or vertical asymptotes.

1. $y = \dfrac{4x^2 - 8x}{x^2 - 4}$

$= \dfrac{4x(x-2)}{(x+2)(x-2)}$

$-2 \rightarrow$ VA

$2 \rightarrow$ Hole

2 $y = \dfrac{x^2 + 10x + 25}{x^2 - 25}$

$\dfrac{(x+5)(x+5)}{(x+5)(x-5)}$

$5 \rightarrow$ VA

$-5 \rightarrow$ Hole

3. $y = \dfrac{x^2 - 9x - 10}{x^2 + 1}$

NO PTS of Discontinuity

$x^2 + 1 = 0$

$-1 \quad -1$

$\sqrt{x^2} = \sqrt{-1}$

There are no real zeros of the denominator.

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

$\dfrac{(x+6)(x-2)}{(x+3)(x+2)(x-2)}$

-3 VA $\quad -2$ VA $\quad 2$ Hole

	x	$+3$
x^2	x^3	$+3x^2$
-4	$-4x$	-12