Bellwork Alg 2 Tuesday, January 7, 2020

State all points of Discontinuity, if any. Classify each point of discontinuity as either a VA or a Hole.

1. $y = \frac{2x^3 - 8x}{x^3 - 3x^2 - 10x}$

Pts of Discontinuity:

VA:

Holes:

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

Pts of Discontinuity:

VA:

Holes:

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

Pts of Discontinuity:

VA:

Holes:

Bellwork Alg 2 Tuesday, January 7, 2020 ANSWERS

State all points of Discontinuity, if any. Classify each point of discontinuity as either a VA or a Hole.

1. $y = \dfrac{2x^3 - 8x}{x^3 - 3x^2 - 10x} = \dfrac{2x(x^2-4)}{x(x^2-3x-10)}$

$= \dfrac{2x(x+2)(x-2)}{x(x-5)(x+2)}$

	x	$+2$
x^2	x^3	$+2x^2$
-4	$-4x$	-8

Pts of Discontinuity: $x = 0, -2, 5$

VA: $x = 5$

Holes: $x = 0, -2$

2. $y = \dfrac{3x^2 + 6x}{x^3 + 2x^2 - 4x - 8}$

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

Pts of Discontinuity: $x = -2, 2$

VA: $x = \pm 2$

Holes: NONE

3. $y = \dfrac{x^3 + 7x^2 + 12x}{4x^2 + 12} = \dfrac{}{4(x^2+3)}$ ← Denominator has no real zeros

Pts of Discontinuity: None

VA: N/A

Holes: N/A