# Pre-Calc Graphing Rational Review 2016

Key

State the critical information. Then graph. State domain.

1 $f(x) = \dfrac{1}{-3x^2+12}$

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

BOBO $y \neq 0$

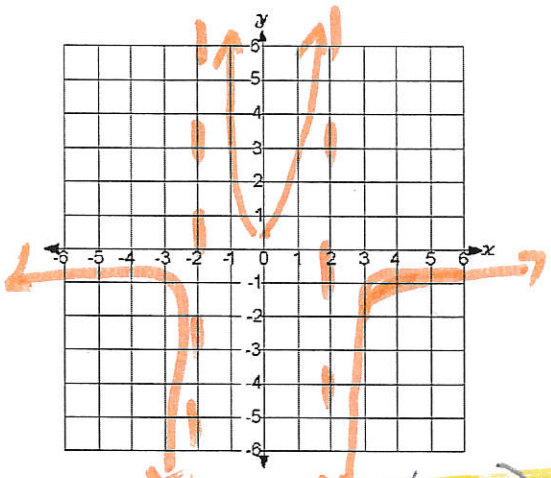
Hole non

VA $x = -2$ $x = 2$

HA $y = 0$

X int set $y = 0$ $0 = 1$ ⇒ none

Y int set $x = 0$ $y = \dfrac{1}{12}$ $(0, 1/12)$



Domain $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$

$(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$.

Test $x = -5$

$y = \dfrac{(-1)(-8)}{8}$

2. $f(x) = \dfrac{x^2+x-12}{-4x-12}$

$= \dfrac{(x+4)(x-3)}{-1(4x+12)}$

$= \dfrac{(x+4)(x-3)}{-4(x+3)}$

hole ⇒ none

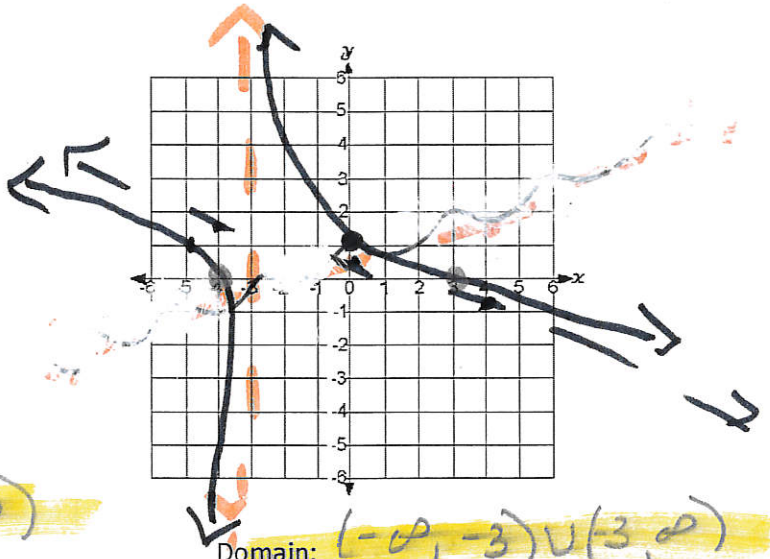
VA $x = -3$

H.A. $-\frac{1}{4}x + \frac{1}{2}$

$-4x - 12 \;\big)\; x^2 + x - 12$

$x^2 + 3x$

$-2x$



Domain: $(-\infty, -3) \cup (-3, \infty)$

x int: $(-4, 0)$ $(3, 0)$

y int: $(0, 1)$

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3. $f(x)=\dfrac{x^2-7x+12}{x-4}$

$f(x)=\dfrac{(x-4)(x-3)}{(x-4)}$

$y = x-3$ Line with a hole!

Hole (4, 1)

VA —

HA —

X int (3, 0)

Y int (0, -3)

4. $f(x)=\dfrac{x^2+x-6}{-x^2+3x}$

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

V.A. $x = +3$

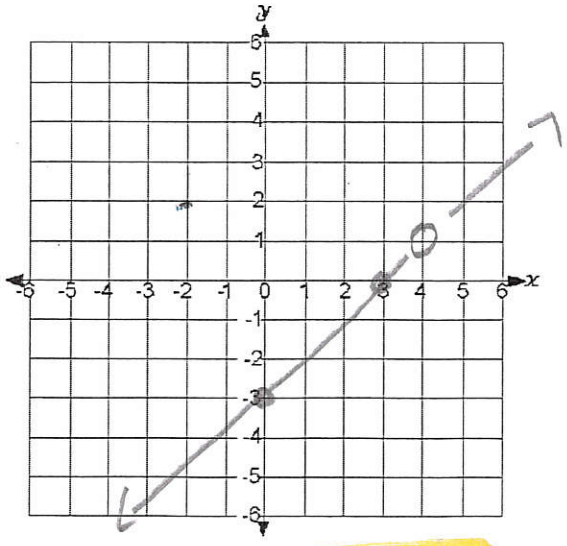
$x = 0$

HA. BOSCCO

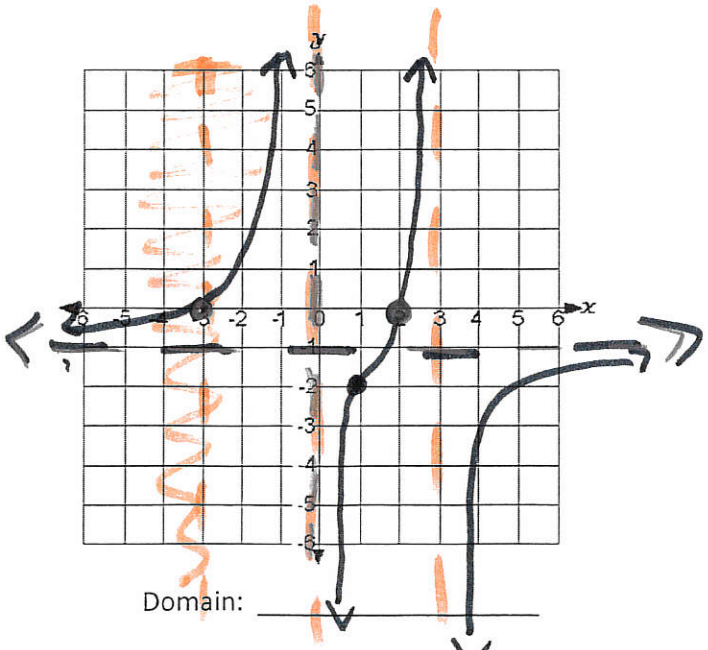
$y = -1$

y int (0, none)

x int (-3, 0) (2, 0)



Domain: $(-\infty, 4) \cup (4, \infty)$



Domain: _____

Test $x = 1$

$y = \dfrac{4(-1)}{-1(-2)}$ $\dfrac{-4}{2} = -2$

Test $x = 2.5$

$(5.5)(.5) = 2.75$