Alg2

April 12, 2012

Get out your homework – pg 491 and 498

32) $x^4 - x^3 - 5x^2 - x - 6$

$$\begin{array}{r|rrrrr} 3 & 1 & -1 & -5 & -1 & -6 \\ & & 3 & 6 & 3 & 6 \\ \hline & 1 & 2 & 1 & 2 & 0 \end{array}$$

$x^3 + 2x^2 + x + 2$

$= x^2(x+2) + 1(x+2)$

$= (x+2)(x^2+1)$

$f(x) = (x-3)(x+2)(x-i)(x+i)$

4/12 - Graphing Rational Expressions

Find each of these for every graph:

Vertical Asymptotes – from values that make the denom = 0

X-intercepts: where the graph crosses the x-axis
make the numerator = 0

Y-intercepts: where the graph crosses the y-axis
find f(0)

Horizontal/Oblique Asymptotes
on an angle

$$f(x) = \frac{2}{x+4}$$

VA: $x + 4 = 0$

$x = -4$

X-int: $2 \neq 0$

no x-int.

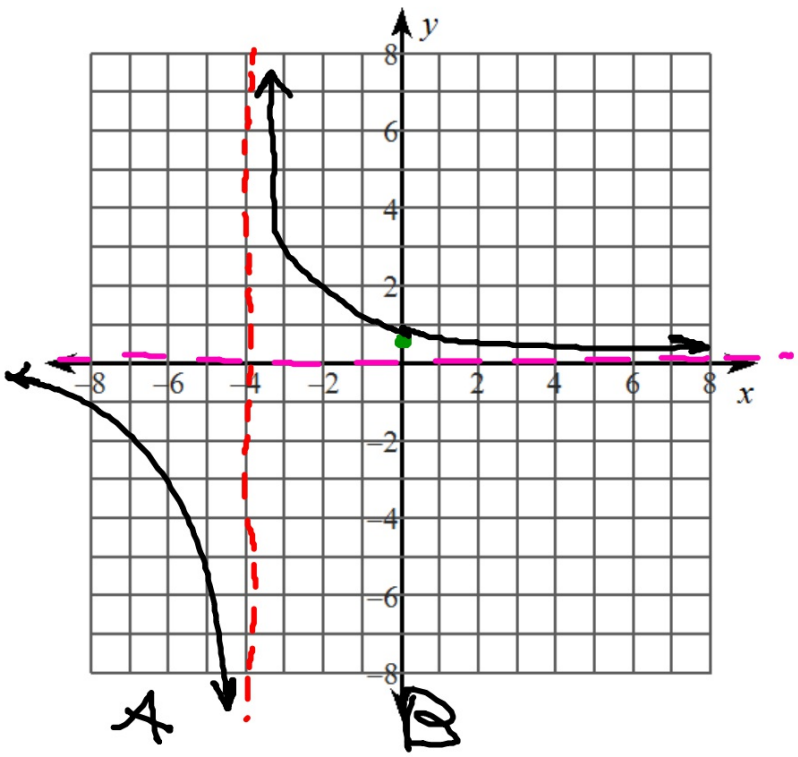
y-int: $f(0) = \frac{2}{0+4}$

$= \frac{1}{2}$

HA: $N^0 < D^0$

$0 \quad 1$

then HA $= 0$



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

VA: $x - 3 = 0$

$x = 3$

x-int: $4 \neq 0$

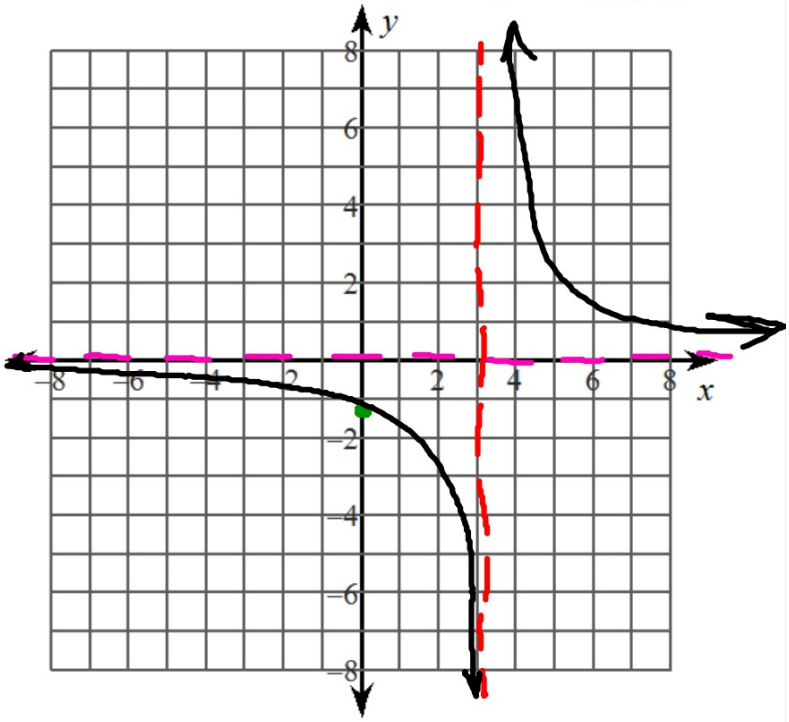
y-int: $f(0) = \frac{4}{0-3}$

$= -\frac{4}{3}$

HA: $N^\circ < D^\circ$

$\longleftrightarrow$ at 0

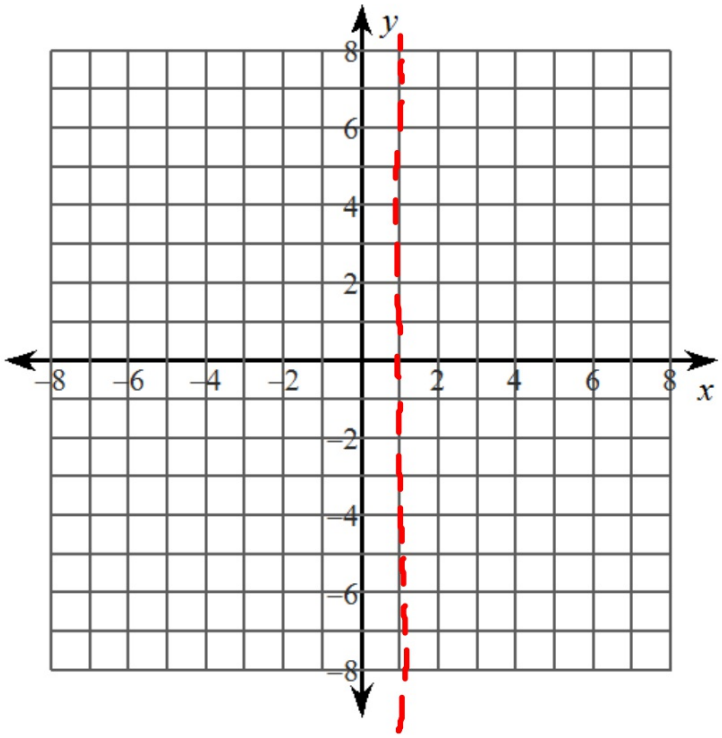
single "opposit



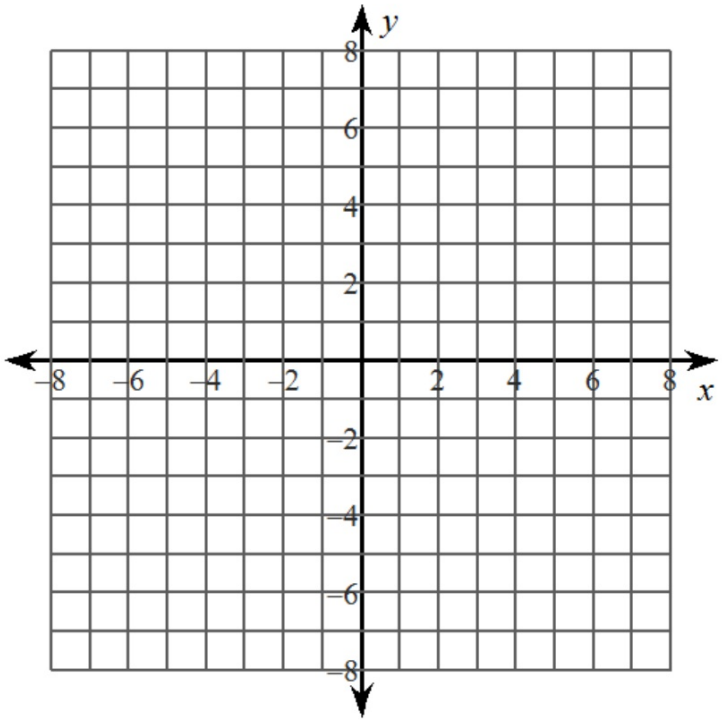
$$f(x) = -\frac{2x}{x-1}$$

VA: $x - 1 = 0$

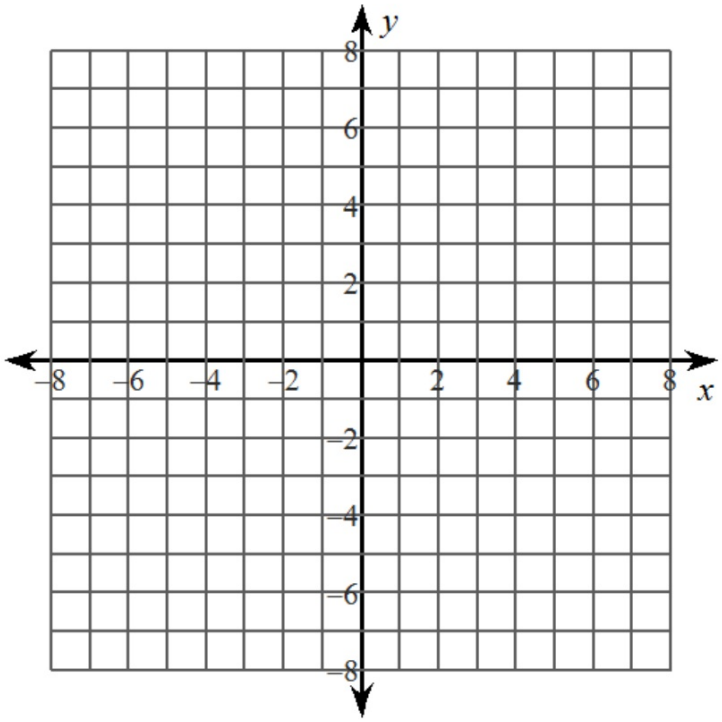
$x = 1$



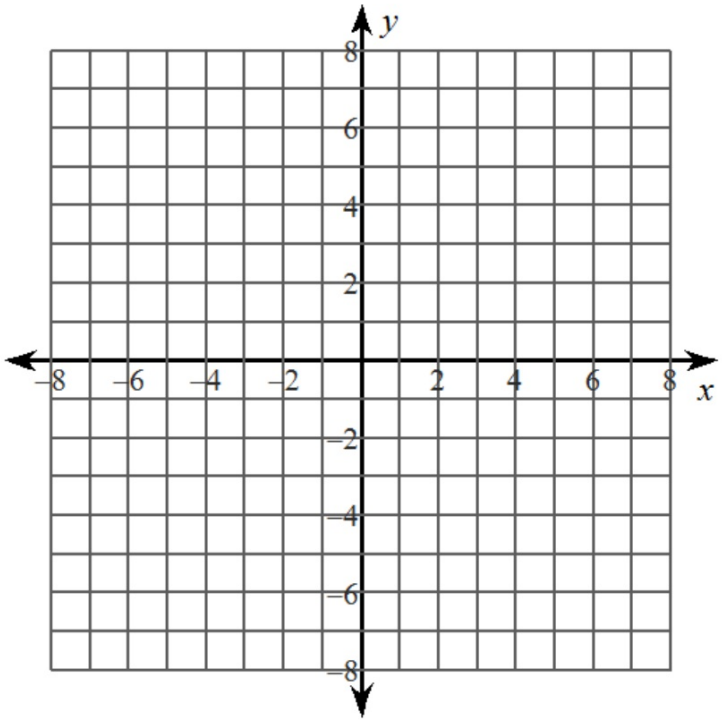
$$f(x) = \frac{x^2 + x - 12}{2x^2 - 8}$$



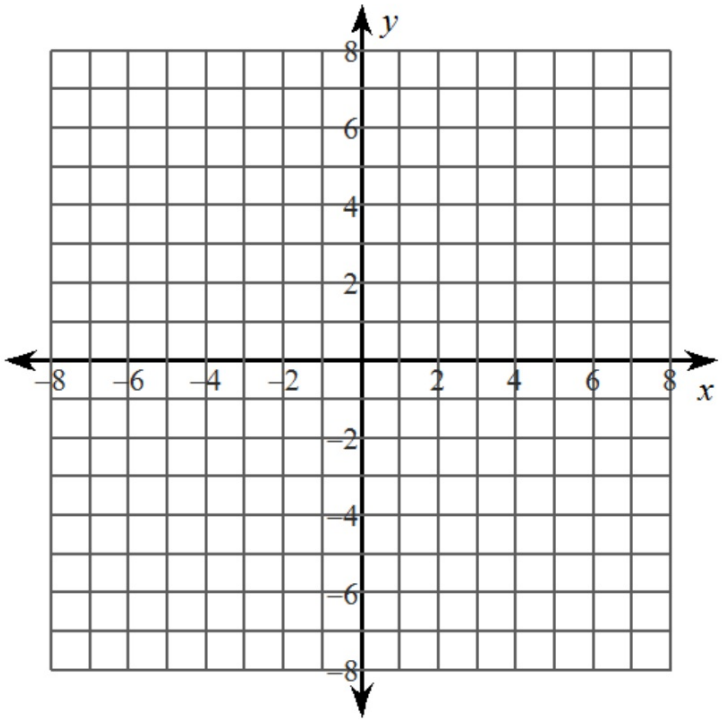
$$f(x) = -\frac{1}{x^2 + x - 6}$$



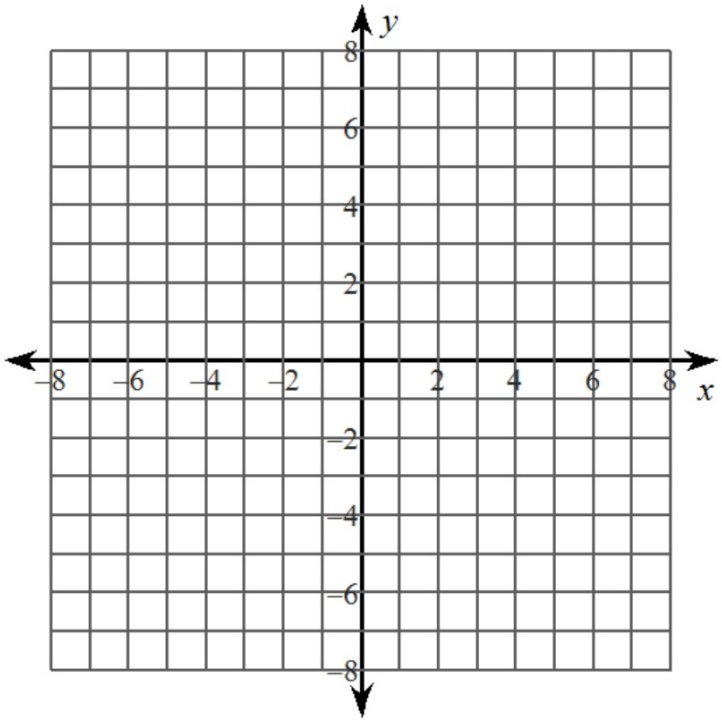
$$f(x) = \frac{3}{x^2 - 4}$$



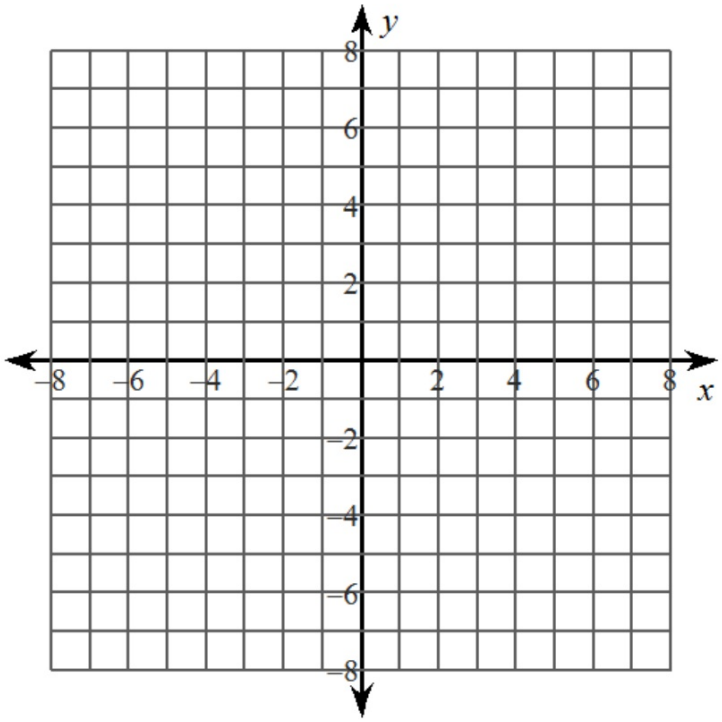
$$f(x) = \frac{x^2 - 2x}{x^2 + 2x - 3}$$



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



$$f(x) = \frac{x^2 + x - 6}{2x + 2}$$



$$f(x) = \frac{x^3 + 3x^2 - 4x}{-3x^2 - 3x + 18}$$