

Name _____

Sketch the following rational functions.

$$1) f(x) = \frac{3x^2 - 12}{x^2 - 3x} \quad x(x-3)$$

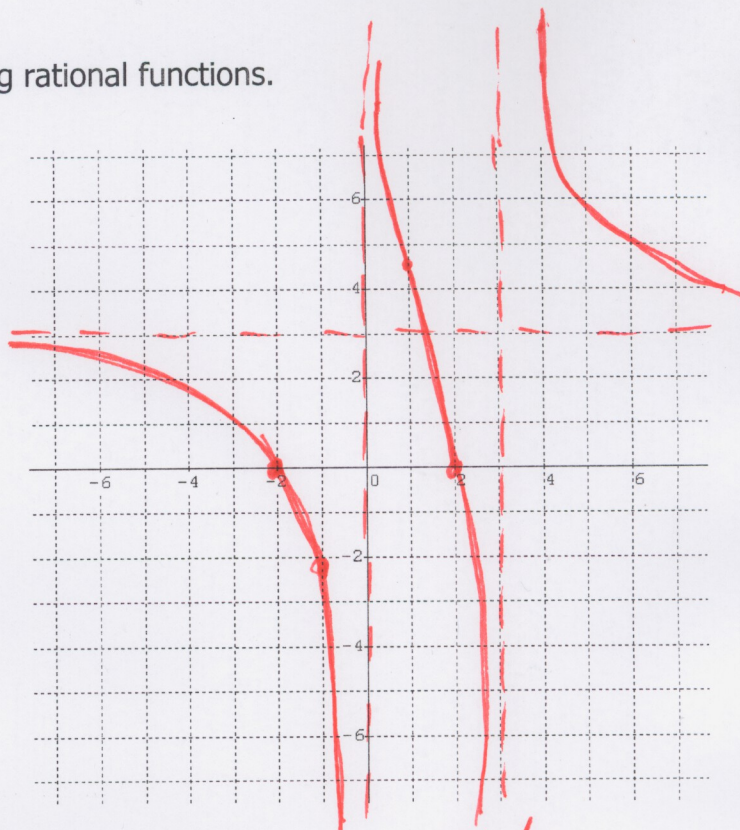
$$x\text{-int} = 2, -2$$

$$y\text{-int} \Rightarrow \text{None}$$

$$\text{points } (4, 9)$$

$$(1, \frac{9}{2})$$

$$(-1, -\frac{9}{4})$$



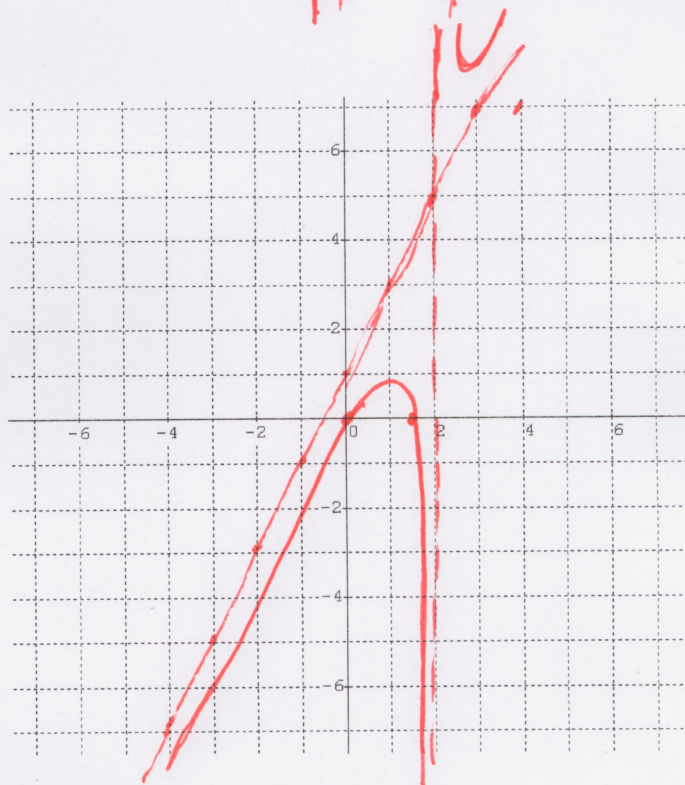
$$2) f(x) = \frac{2x^2 - 3x}{x - 2}$$

$$x\text{-int} = 0, \frac{3}{2}$$

$$y\text{-int} = 0$$

$$\text{asymptote: } y = 2x + 1$$

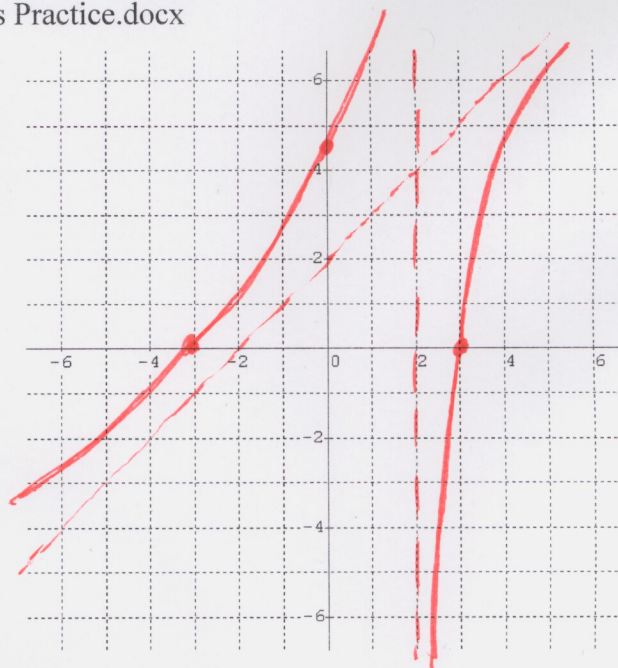
$$\text{points } (3, 9)$$



$$3) f(x) = \frac{x^2 - 9}{x - 2}$$

$$y\text{-int} = \frac{9}{2} \quad x\text{-ints} = 3, -3$$

slant asymptote $y = x + 2$



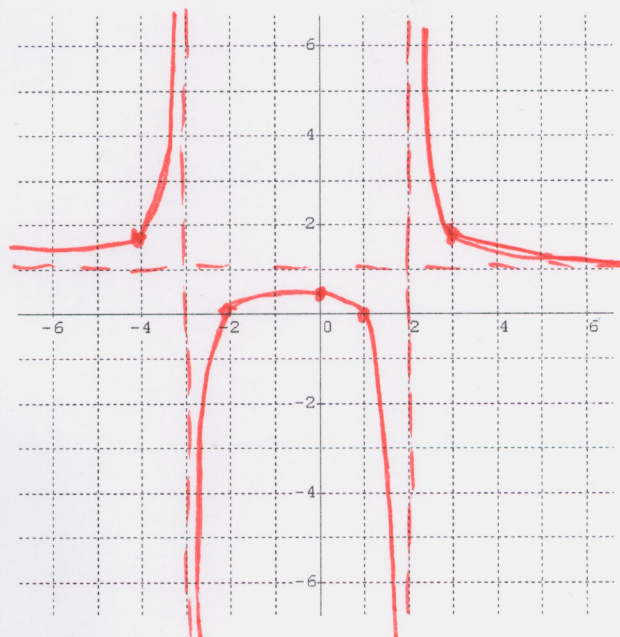
$$4) f(x) = \frac{x^2 + x - 2}{x^2 + x - 6}$$

$$y\text{-int} = \frac{1}{3}$$

$$x\text{-ints} = -2, 1$$

points $(3, \frac{5}{3})$

$(-4, \frac{5}{3})$



$$5) f(x) = \frac{x^3 - 1}{x^2}$$

$$y\text{-int NONE} \quad x\text{-int} = 1$$

asymptote $y = x$

points $(-2, -\frac{9}{4})$

$(-1, -2)$

