

Without using a graphing calculator, produce a nice sketch of each rational function. Label all significant features, including intercepts.

→ Feel free to check your answers at the board... but →



1. $f(x) = \frac{1}{x+3} - 4$

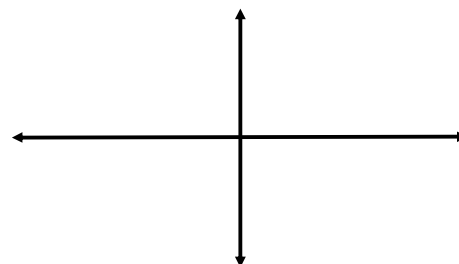
Vertical Asymptote(s): _____

Horizontal Asymptote: _____

Slant Asymptote: none

y intercept: _____

x intercept: _____



Two more on back →

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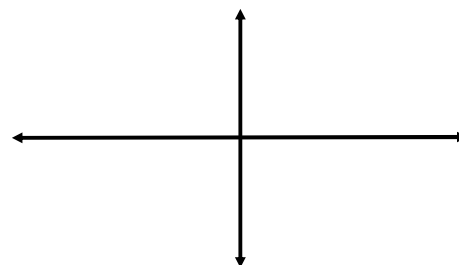
Vertical Asymptote(s): _____

Horizontal Asymptote: _____

Slant Asymptote: none

y intercept: _____

x intercept: _____



Two more on back →

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

Vertical Asymptote(s): _____

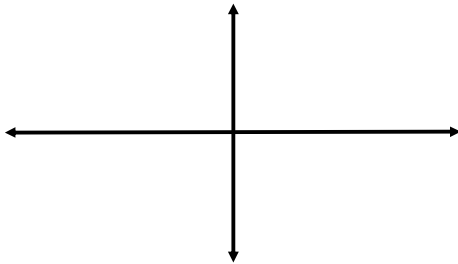
Horizontal Asymptote: _____

Slant Asymptote: none

y intercept: _____

x intercept: _____

*carefully investigate $f(1)$, $f(-1)$, $f(3)$, $f(-3)$
in order to determine where / how the branches fit*



$$3. \quad f(x) = \frac{x^2 - 16}{x + 5}$$

Vertical Asymptote(s): _____

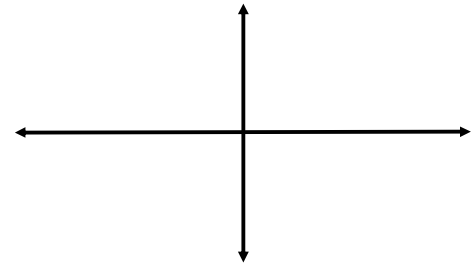
Horizontal Asymptote: _____

Slant Asymptote: _____

y intercept: _____

x intercept: _____

*this one DOES have a slant... see if you
can draw it in and fit the branches around it*



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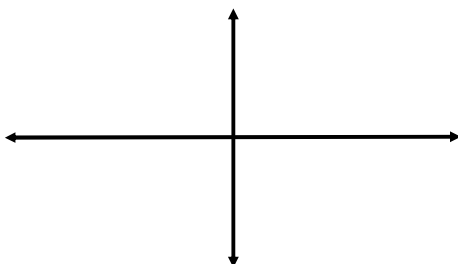
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