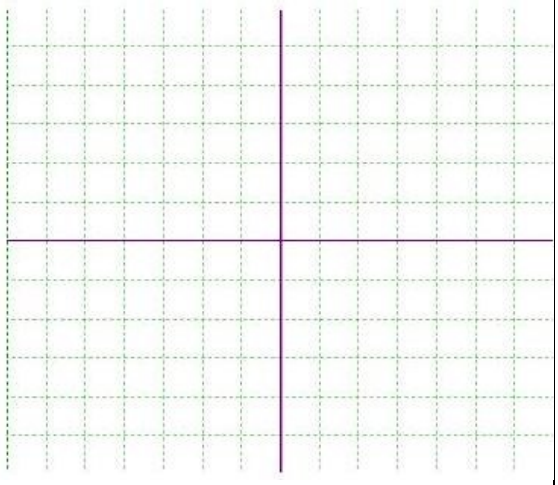
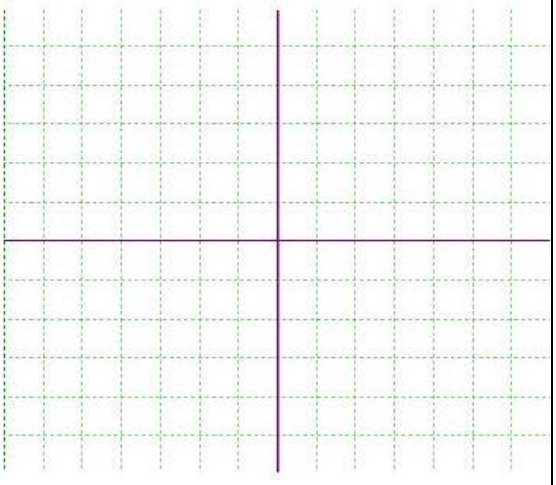
Math 1050 ~ College Algebra

13 Graphing Rational Functions

In our toolkit of functions, we have two rational functions.

EX 1

Sketch these using transformations of the toolkit function.

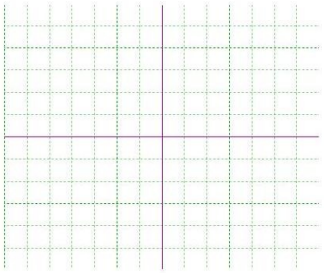
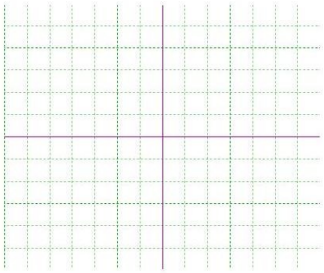
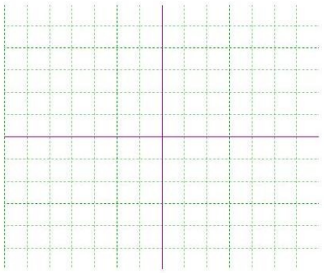
a) $g(x) = \frac{4}{(x+1)} - 2$	b) $f(x) = \frac{1}{(x-2)^2} + 3$
	

Not all rational functions can be put in this form. It is helpful to follow the steps in the previous lesson to get a graph of a rational function.

1. Determine the domain and plot vertical asymptotes.
2. Find and plot the x - and y - intercepts.
3. Determine and plot the end-behavior asymptotes.
4. Use a sign-line and the value of other points to complete the graph.

EX 2

For each of these, determine the x and y -intercepts, vertical and horizontal asymptotes and sketch a graph.

$f(x) = \frac{3}{1-x}$	$g(x) = \frac{3-x}{x^2+4}$	$h(x) = \frac{2x^2-5x-3}{x^2+x-2}$
		

EX 3

Analyze and graph.

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