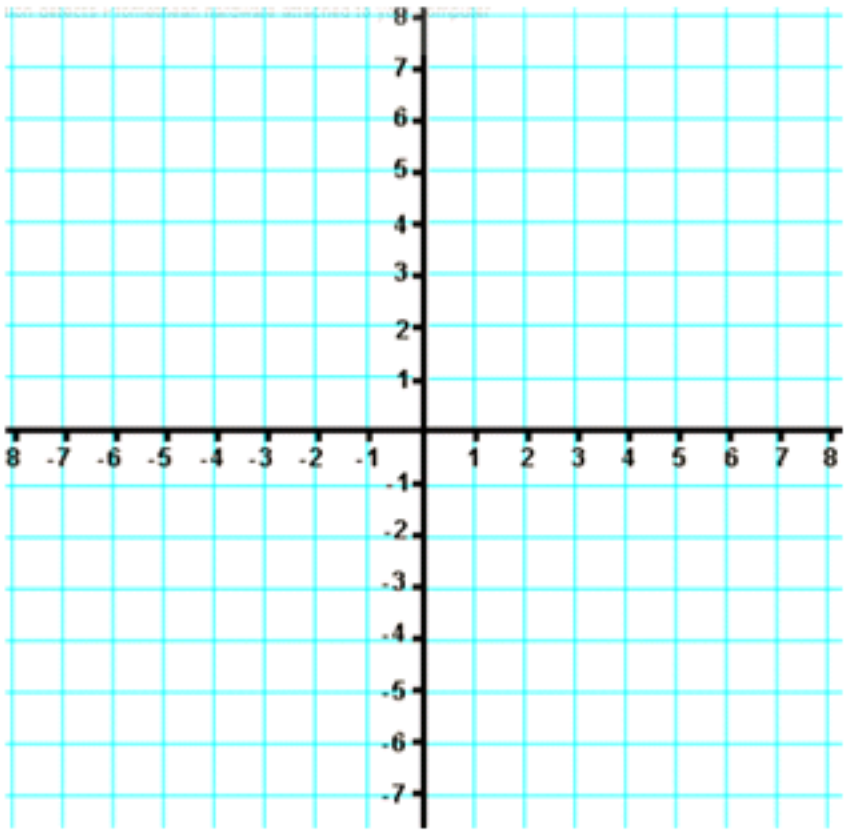
# Lesson 2.7--Graphs of Rational Functions

BELL ACTIVITY: (NO GUT!)

GRAPH: $f(x) = \frac{3x^2 + 11x + 6}{x + 3}$

FIRST, tell all you know about it!...domain, asymptote, zeros,holes, etc

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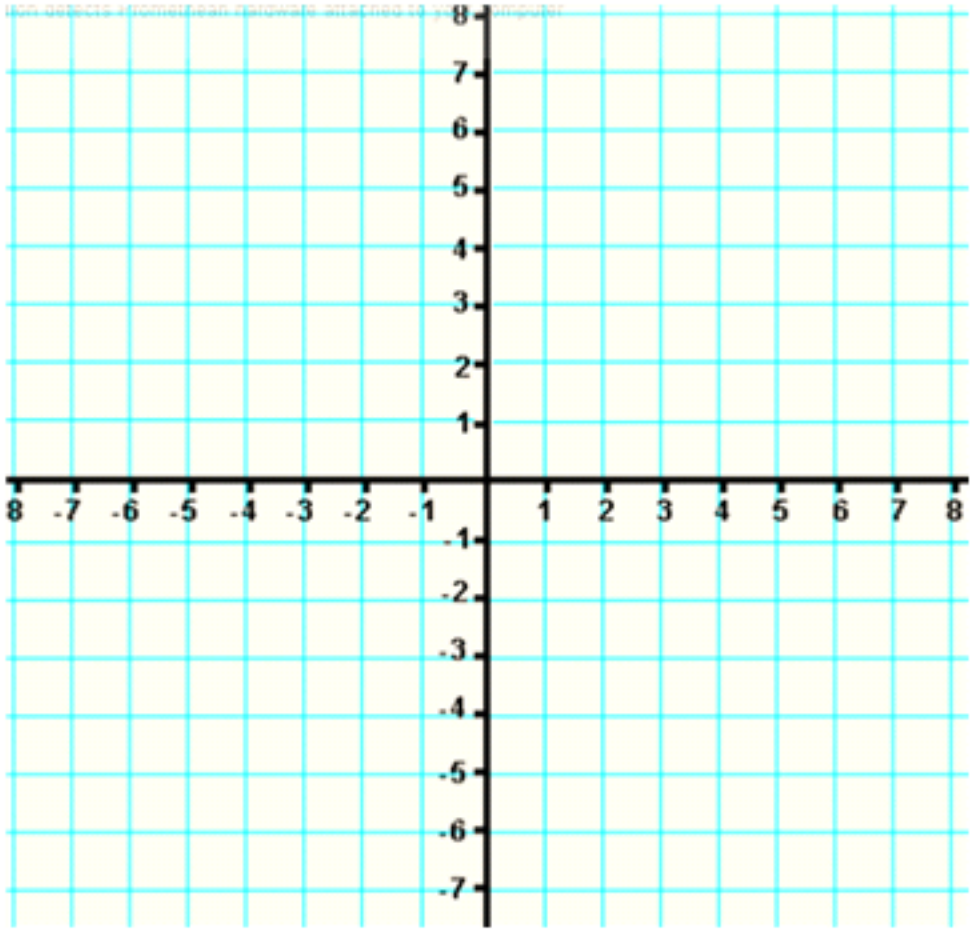
$f(x) = \frac{x + 3}{3x^2 + 11x + 6}$

Tell all you know about f(x) and graph it!  $f(x) = \frac{2x - 1}{x}$



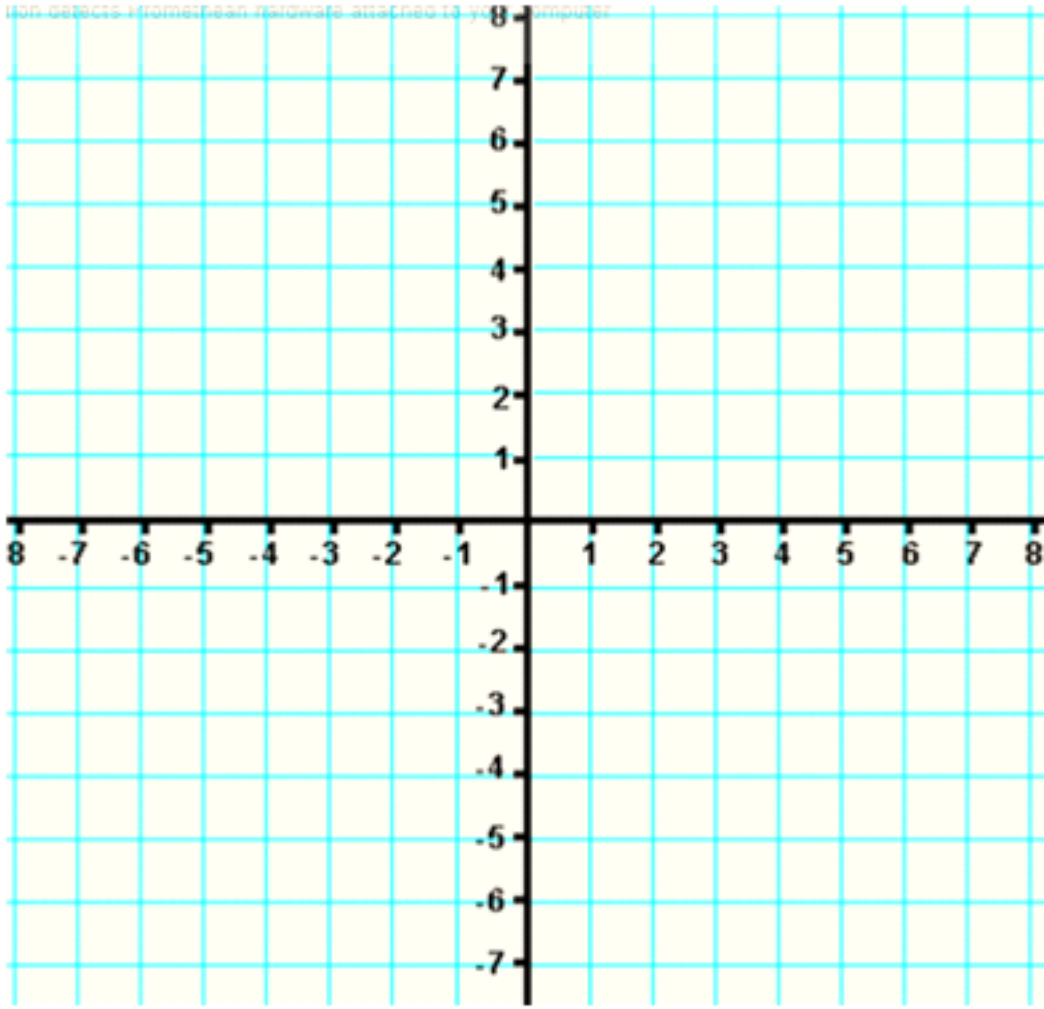
Vertical and horizontal asymptotes...holes and zeros...what ELSE could there be to these rational functions?

SLANT ASYMPTOTES!! YIPPEE!!

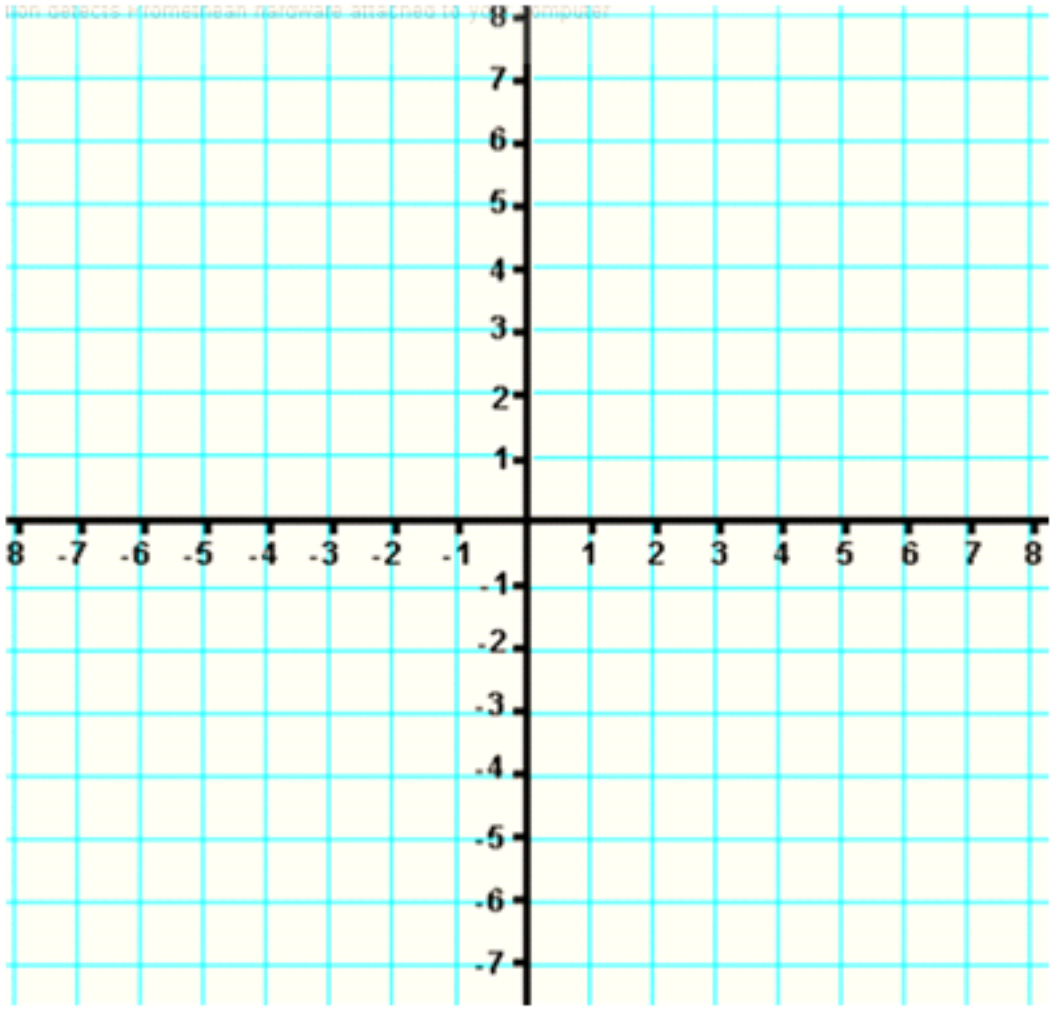
turn to page 202 to see what these graphs look like!

If degree of numerator is greater than degree of denominator BY ONE then there is a slant asymptote

$$y = \frac{x^2 - x}{x + 1}$$



Consider the functions $f(x) = \frac{1}{x^2}$ Tell me what you know about it



Recall: slant asymptotes are found by dividing.....see pg. 200.

Other great examples of graphing these rational functions on pg. 201

Are you interested in seeing a rational function that has a parabolic asymptote?!

graph: $y = \frac{x^3 - 8}{x + 1}$

A rectangular page is designed to contain 48 square inches of print. The margins on each side of the page are each 1½ inches. The margins a the top and bottom are each 1 inch. What should the dimensions of the page be so that the minimum amount of paper is used?

We want to "minimize" paper so let's write a function to describe the area of the paper (amt. of paper used) and then find the minimum of the function.