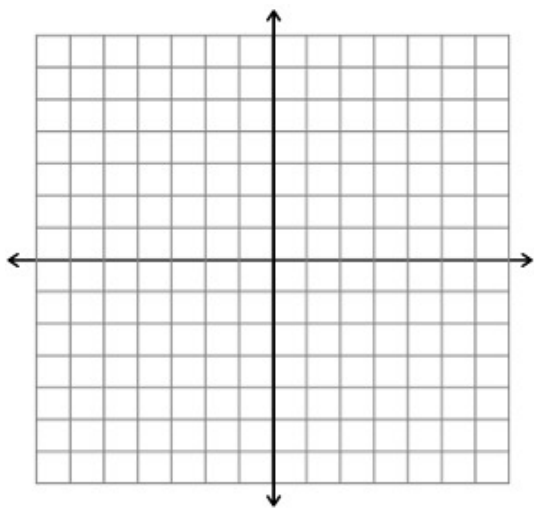


Worksheet 60 - Rational Functions

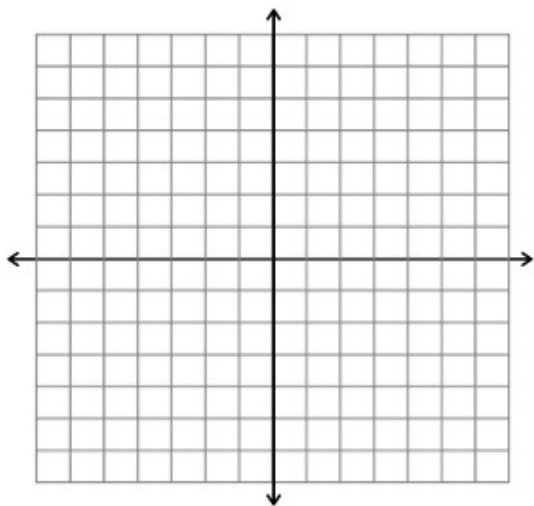
For each rational function given below, do the following:

- Identify any holes, zeros and vertical asymptotes.
- Identify the horizontal or slant asymptote or give the end behavior.
- Find the y -intercept.
- Give a sign chart.
- Sketch the graph clearly showing the end-behavior, zeros, and y -intercept.

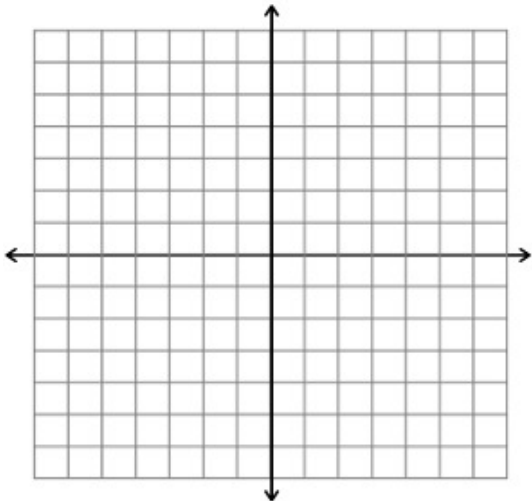
1. $f(x) = \frac{-2(x+3)}{(x+3)(x-1)}$



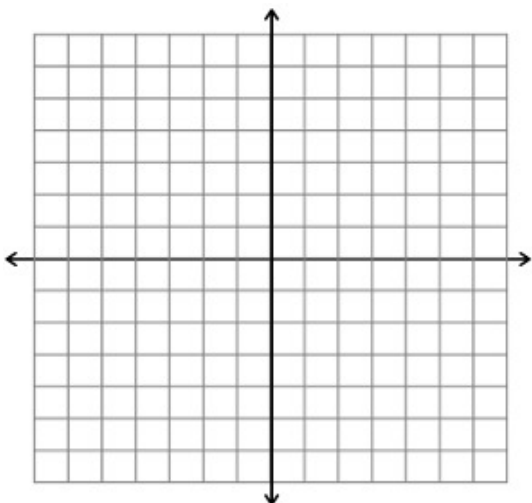
2. $f(x) = \frac{-2(x+3)^2(x+1)}{(x+3)(x-1)}$



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



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



5. What is the end behavior of $y = \frac{(ax-c)^3(x-b)}{(dx-e)^2(x-f)^2}$?