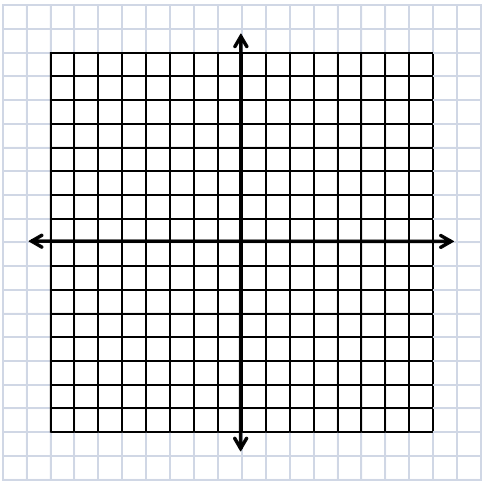
Name _____ Date _____

Ms. Schmidt Pre-Calculus

Slant Asymptotes

Try This: Sketch the following rational function. Be sure to find all key features!!

1) $f(x) = \frac{5+2x}{1+x}$



Slant Asymptotes:

-If the degree of the numerator is exactly one more than the degree of the denominator then the function has a **slant asymptote.**

-If there is a slant asymptote use **long division** to find the equation of the asymptote, the **dividend is the numerator** and the **divisor is the denominator,** the slant asymptote is the **quotient.**

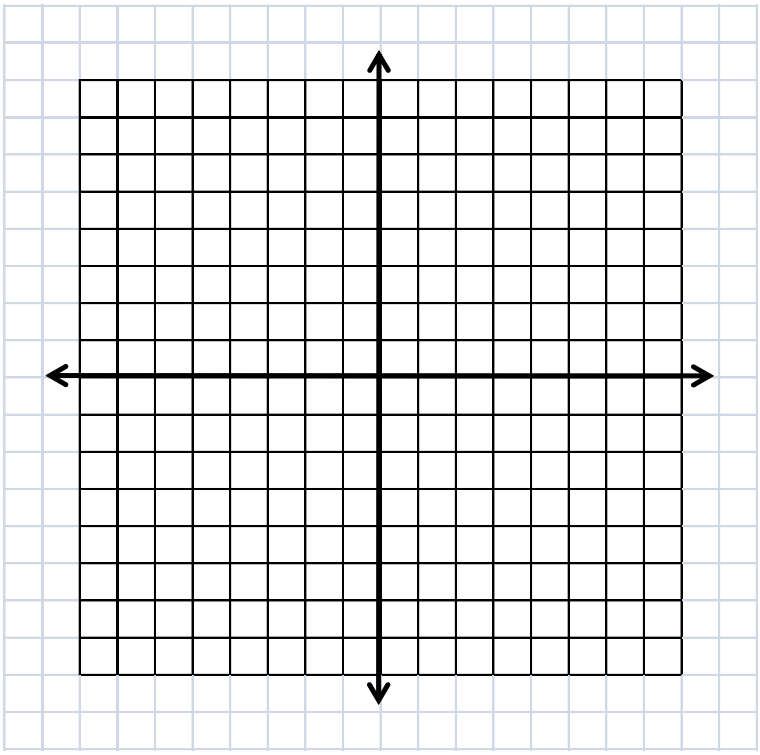
Example: Find the slant asymptote,

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

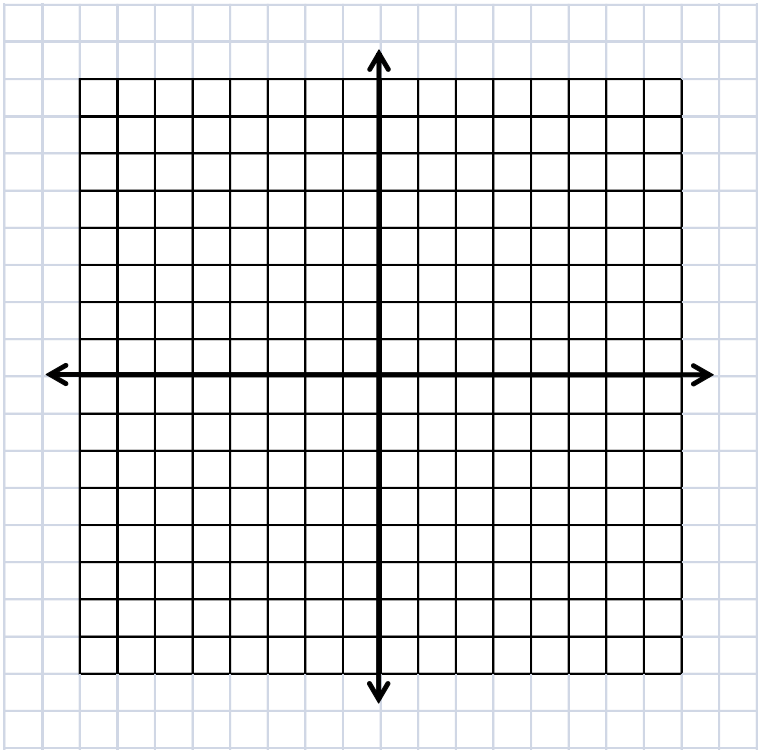
2) $f(x) = \frac{x^2+x-1}{x+2}$

Now, let's graph with them!

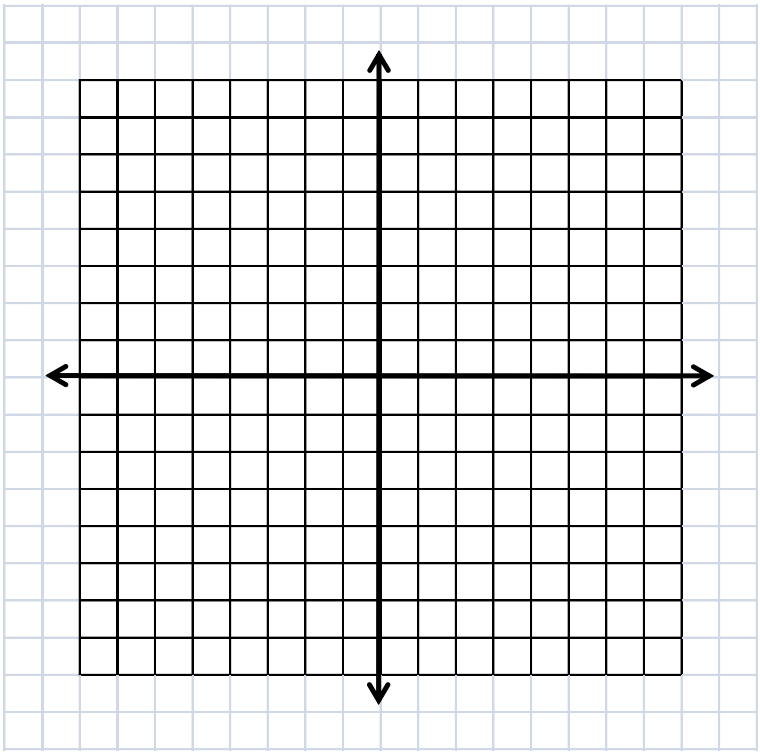
3) $f(x) = \frac{x^2-x-2}{x-1}$



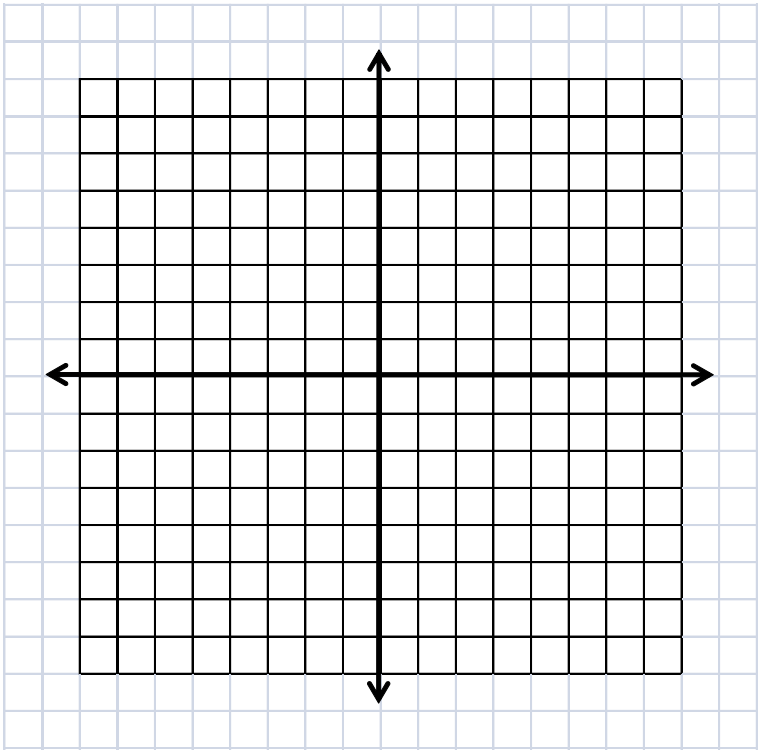
4) $f(x) = \frac{x^2-x-1}{x-3}$



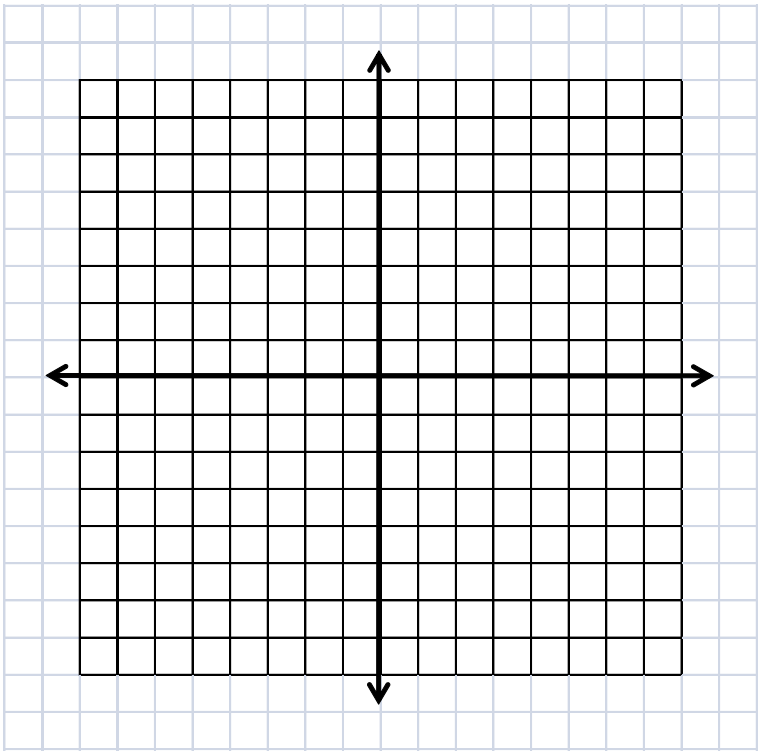
5) $f(x) = \frac{x^2+x-2}{x+1}$



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



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



8) $f(x) = \frac{x^2-2x-12}{x-5}$