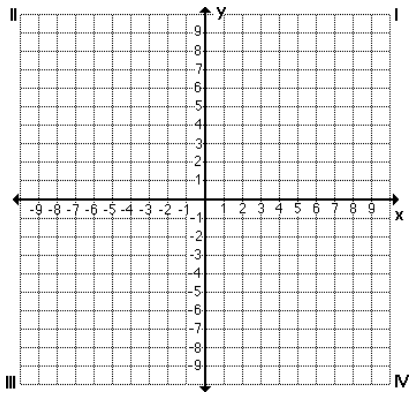
Name_____

Precalculus Unit 3: 3.2 Homework
Rational Function Graphs

For each of the following rational functions, find the domain, the vertical asymptote(s) / hole(s), the horizontal asymptote / slant asymptote, the x-intercept(s), the y-intercept, and draw a sketch. **Provide work to support your answer.**

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



Domain:

x-int:

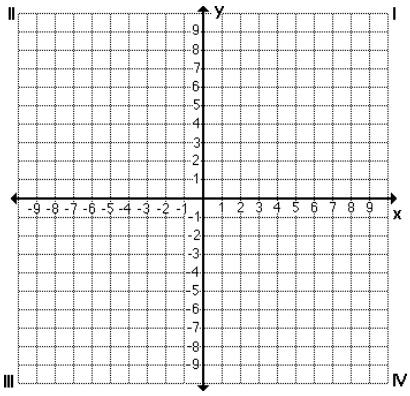
VA:

Hole:

HA / SA:

y-int:

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



Domain:

x-int:

VA:

y-int:

Hole:

HA / SA:

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

Domain:

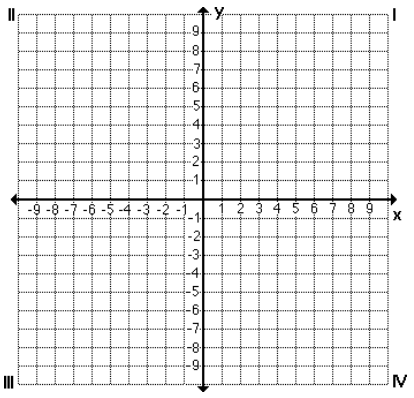
x-int:

VA:

Hole:

y-int:

HA / SA:



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

Domain:

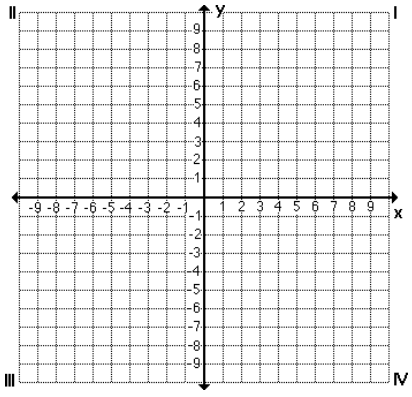
x-int:

VA:

Hole:

y-int:

HA / SA:



5. The concentration *C* of a chemical in the bloodstream *t* hours after injection into muscle tissue is given by $C = \frac{3t^2+t}{t^3+50}, t \geq 0$.

   a.) Determine the horizontal asymptote and interpret its meaning in the context of the problem.

   b.) Graph the function on a graphing utility and approximate the time when the concentration is the greatest.

   c.) Use the graphing utility to determine when the concentration is less than 0.345.