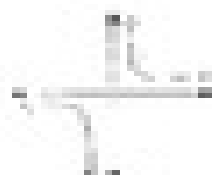


Drawing Rational Functions and Asymptotes Name: _____

Sketch a graph of the following. You can use a graphing calculator, the geometry dashboard app on the computer, or using a web based graphing application.

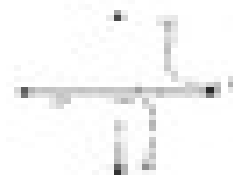
Some tips: looking at the rational function graphically might be useful around the asymptote and behavior.

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



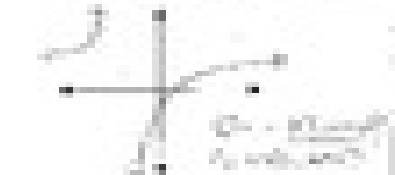
Graph: $f(x) = \frac{1}{x}$
 Vertical Asymptote: $x=0$
 Horizontal Asymptote: $y=0$
 Domain: $x \neq 0$

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



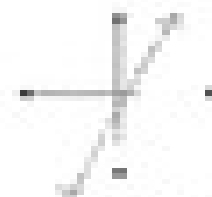
Graph: $f(x) = \frac{1}{x-1}$
 Vertical Asymptote: $x=1$
 Horizontal Asymptote: $y=0$
 Domain: $x \neq 1$

3. $f(x) = \frac{4x^2 - 12x + 9}{x^2 + 4}$



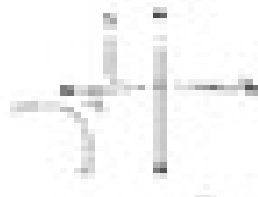
Graph: $f(x) = \frac{4x^2 - 12x + 9}{x^2 + 4}$
 Vertical Asymptote: $x=0$
 Horizontal Asymptote: $y=4$
 Domain: $x \neq 0$

4. $f(x) = \frac{4x^2 - 12x + 9}{x^2 + 4}$



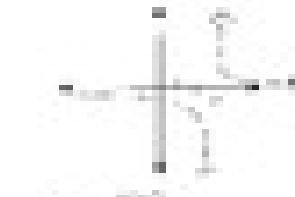
Graph: $f(x) = \frac{4x^2 - 12x + 9}{x^2 + 4}$
 Vertical Asymptote: $x=0$
 Horizontal Asymptote: $y=4$
 Domain: $x \neq 0$

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



Graph: $f(x) = \frac{x^2 + 2x + 1}{x^2 + 4}$
 Vertical Asymptote: $x=0$
 Horizontal Asymptote: $y=1/4$
 Domain: $x \neq 0$

6. $f(x) = \frac{x^2 + 2x + 1}{x^2 + 4}$



Graph: $f(x) = \frac{x^2 + 2x + 1}{x^2 + 4}$
 Vertical Asymptote: $x=0$
 Horizontal Asymptote: $y=1/4$
 Domain: $x \neq 0$