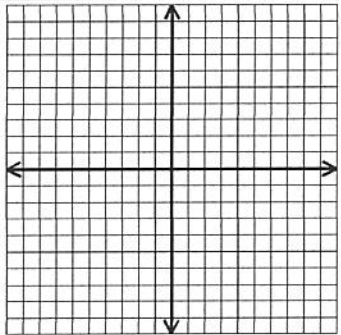
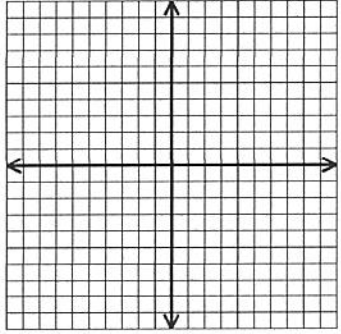


More Parent Functions

Function	Key Characteristics	Domain and Range	Graph
<p>Hyperbola</p> <p>Equation:</p> <p>_____</p>	<p>x-intercept:</p> <p>y-intercept:</p> <p>Vertical Asymptote:</p> <p>Horizontal Asymptote:</p>		
<p>“Volcano”</p> <p>Equation:</p> <p>_____</p>	<p>x-intercept:</p> <p>y-intercept:</p> <p>Vertical Asymptote:</p> <p>Horizontal Asymptote:</p>		

Remember These?

Transformation Rules

- $f(x) + a$ is $f(x)$ shifted upward a units
- $f(x) - a$ is $f(x)$ shifted downward a units
- $f(x + a)$ is $f(x)$ shifted left a units
- $f(x - a)$ is $f(x)$ shifted right a units
- $-f(x)$ is $f(x)$ flipped upside down ("reflected about the x -axis")
- $f(-x)$ is the mirror of $f(x)$ ("reflected about the y -axis")

Name: _____

Date: _____

PC: Hyperbolas and Volcanoes

Sketch each function using a minimum of 2 points and including any and all asymptotes. For each graph, state the domain, range, intercepts and equations of any asymptotes.

1. $y = \frac{1}{x+2}$

9. $y = \frac{2}{x}$

2. $y = \frac{1}{x} + 1$

10. $y = \frac{1}{2x^2}$

3. $y = \frac{1}{x-1} - 3$

4. $y = -\frac{1}{x-4} + 2$

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

6. $y = \frac{1}{x^2} - 6$

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

8. $y = \frac{1}{-(x+2)^2} - 4$