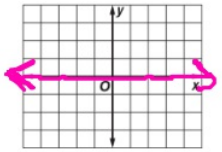
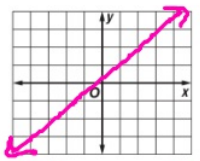
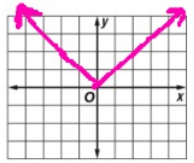
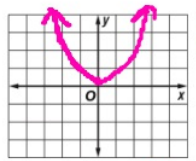
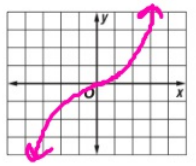
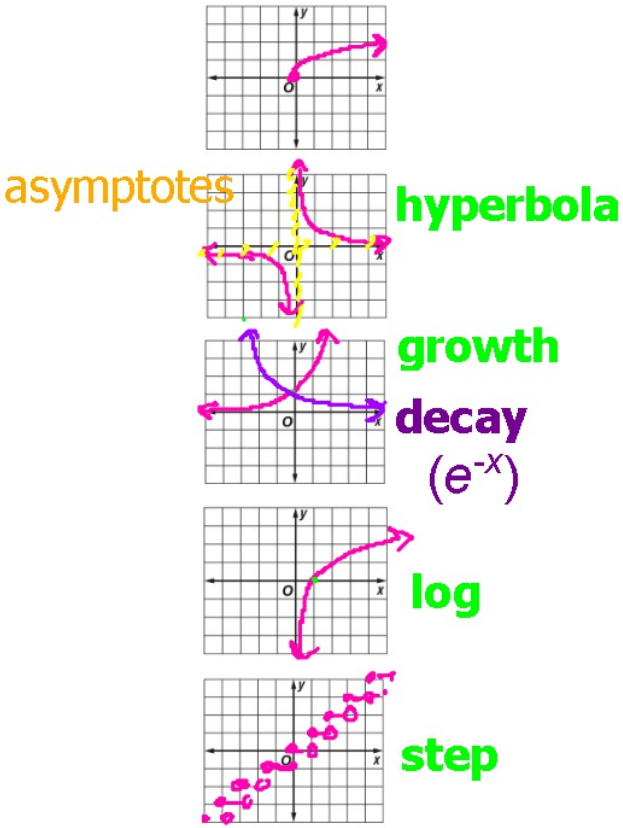
Types of Functions

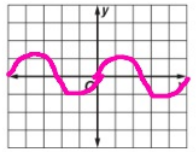
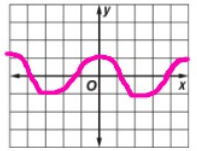
NAME:	EQUATION:	GRAPH:
Constant	$f(x) = 0$	
Identity	$f(x) = x$	
Absolute Value	$f(x) = \lvert x \rvert$	 V
Polynomial Even	$f(x) = x^2$	 parabola
Polynomial Odd	$f(x) = x^3$	

Types of Functions, cont.

NAME:	EQUATION:	GRAPH:
Radical	$f(x) = \sqrt{x}$	
Rational	$f(x) = 1/x$	
Exponential	$f(x) = e^x$	
Logarithmic	$f(x) = LN(x)$	
Greatest Integer	$f(x) = [\lvert x \rvert]$	



Types of Functions, cont.

NAME:	EQUATION:	GRAPH:
Sine	f(x) = sin(x)	
Cosine	f(x) = cos(x)	

Transformations of Functions

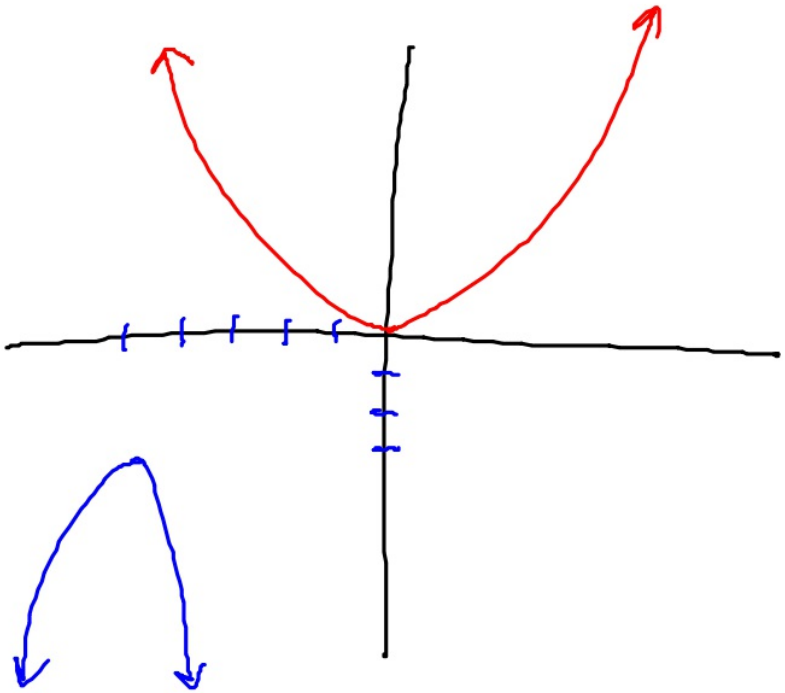
$$f(x) = -2(x+5)^2-3$$

+f: shift up
-f: shift down

+x: shift left
-x: shift right

+/-f: flip down
+/-x: flip left

mult. > 1: narrow
mult. < 1: wide



Describe how the graphs of f(x) and g(x) are related.

1. $f(x) = x^2$ and $g(x) = (x + 3)^2 - 1$

2. $f(x) = |x|$ and $g(x) = -|2x|$

Use the graph of the given parent function to describe the graph of each related function.

3. $f(x) = x^3$

a. $y = 2x^3$

b. $y = -0.5(x - 2)^3$

c. $y = |(x + 1)^3|$

4. $f(x) = \sqrt{x}$

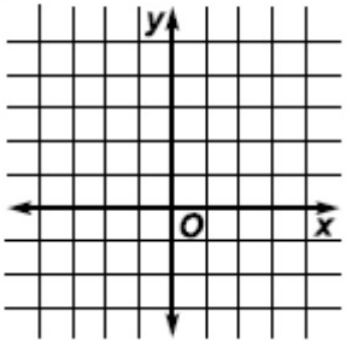
a. $y = \sqrt{x + 3} + 1$

b. $y = \sqrt{-x} - 2$

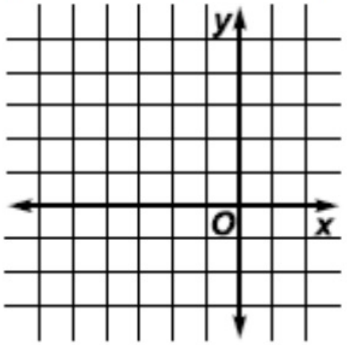
c. $y = \sqrt{0.25x} - 4$

Sketch the graph of each function.

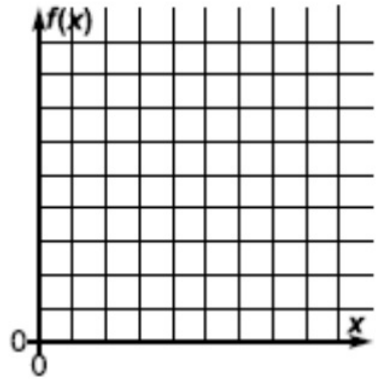
5. $f(x) = -(x - 1)^2 + 1$



6. $f(x) = 2|x + 2| - 3$



7. ***Consumer Costs*** During her free time, Jill baby-sits the neighborhood children. She charges $4.50 for each whole hour or any fraction of an hour. Write and graph a function that shows the cost of x hours of baby-sitting.



Graphing Inequalities in Two Variables

<, > : dotted line (boundary only--NOT solution)
≤, ≥ : solid line (part of solution)
<, ≤ : shade down (y is less)
>, ≥ : shade up (y is greater)