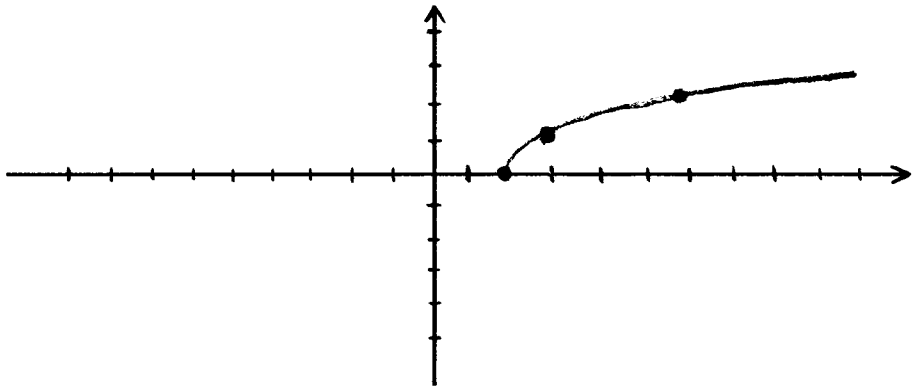
Graphing: Reflections, Stretching, Shrinking
Worksheet to Accompany Videotape #21

Reflections of Graphs Across X or Y Axis

Given $f(x) = \sqrt{x-2}$, domain $x \geq 2$ graphed below:

x	y
2	0
3	1
6	2
11	3



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

Domain: _____

x	y

2. Graph $f(x) = \sqrt{-x-2}$

Domain: _____

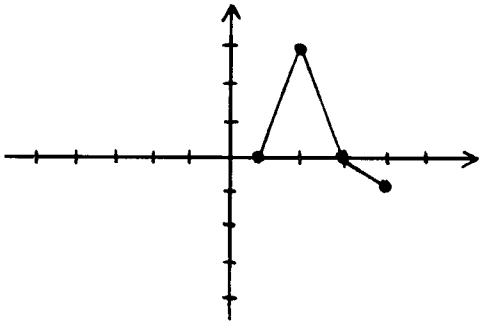
x	y

In general:

The graph of -f(x) is the graph of f(x) reflected across _____ .

The graph of f(-x) is the graph of f(x) reflected across _____ .

3. Given y = f(x) below, sketch on the same axes



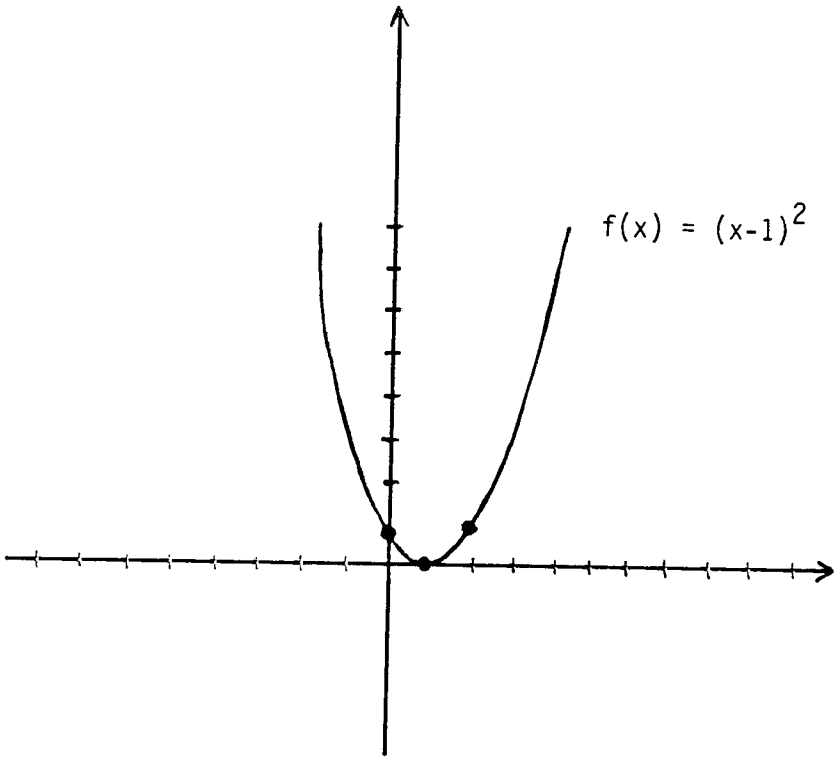
a. y = -f(x)

b. y = f(-x)

Tape #21, Page 2
Graphing by Stretching Away from or Shrinking Towards X-Axis

$f(x) = (x-1)^2$

x	y
-1	4
0	1
1	0
2	1
3	4



1. Sketch

   $f(x) = 2(x-1)^2$

x	y
-1	
0	
1	
2	
3	

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

x	y
-1	
0	
1	
2	
3	

In general: if k is a positive number and

a) $k > 1$, the graph of $kf(x)$ is found by _____

b) $k < 1$, the graph of $kf(x)$ is found by _____

3. Given $y = f(x)$ below, Sketch on the same axes

   a. $y = 2f(x)$

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