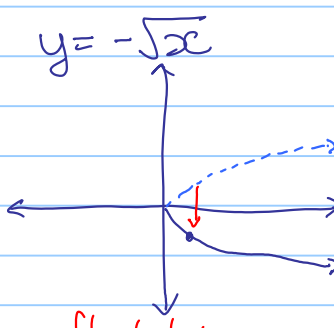
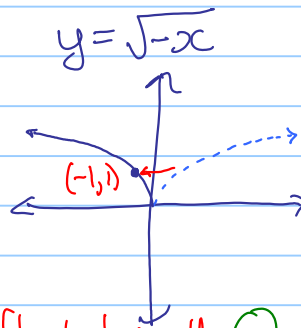
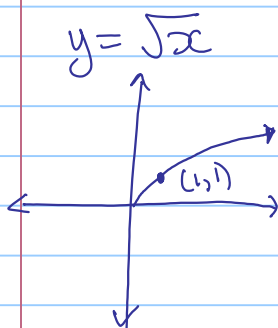


3.2/3.3 Reflecting & Stretching Functions

Note Title

03/10/2012

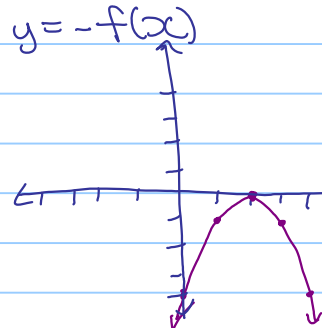
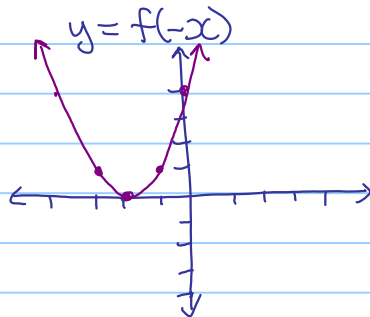
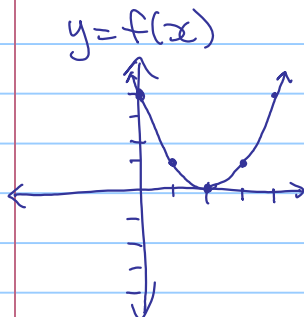
Draw each graph:



reflected in the y-axis
 $(1,1) \rightarrow (-1,1)$
 $y = f(-x)$
 $x \rightarrow -x$

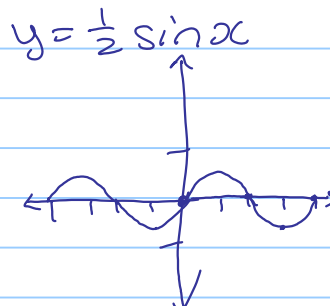
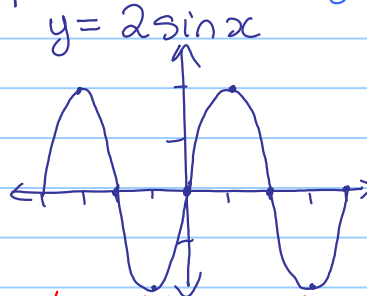
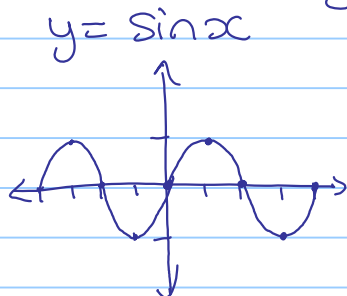
reflected in x-axis
 $(1,1) \rightarrow (1,-1)$
 $y = -f(x)$
 $y \rightarrow -y$

Draw the function after each transformation.



State the coordinates of any invariant points
 $(0,4)$ $(2,0)$

Draw each graph. (zoom trig)



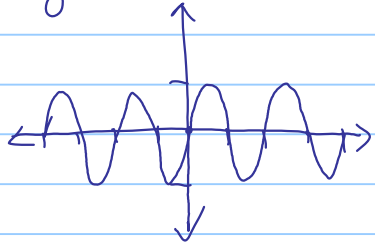
vertical stretch by a factor of 2 (expansion)
 $y = 2f(x)$

vert. stretch by a factor of $\frac{1}{2}$ (compression)
 $y = \frac{1}{2}f(x)$

$$y \rightarrow \frac{y}{2}$$

$$y \rightarrow 2y$$

Draw $y = \sin(2x)$

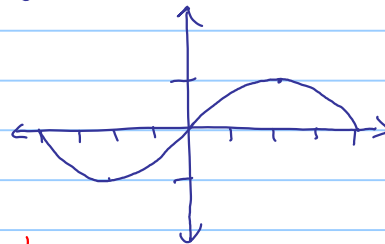


horizontal compression by $\frac{1}{2}$

$$y = f(2x)$$

$$x \rightarrow 2x$$

$y = \sin(\frac{1}{2}x)$



horiz. expansion by 2

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

$$x \rightarrow \frac{1}{2}x$$

For $y = af(bx)$, a is a vertical stretch by a factor of a and b is a horizontal stretch by a factor of $\frac{1}{b}$.

If $(1, -2)$ is on $y = f(x)$, what point is on

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

b) $y = -3f(2x)$

$(1, -2) \rightarrow (-1, -1)$
 change sign
 half

$(1, -2) \rightarrow (\frac{1}{2}, 6)$
 half or divide by 2
 $x \rightarrow \frac{1}{2}x$