

1.2

$$49. (1, .6) (-2, -.6)$$

$$m = \frac{-.6 - .6}{-2 - 1} \dots$$

$$m = \frac{-1.2}{-3}$$

$$m = .4$$

$$(1, .6)$$

$$y = mx + b$$

$$.6 = .4(1) + b$$

$$.6 = .4 + b$$

$$.2 = b$$

$$y = .4x + .2$$

$$10y = 4x + 2$$

$$5y = 2x + 1$$

$$0 = 2x - 5y + 1$$

# 1.6 Transformations

$$y = x^2$$

$$y = x^2 + 5$$

Translation  
5 units up

$$y = x^2 - 2$$

Translation  
2 units down

$$y = (x - 4)^2$$

Translation  
4 units right

$$y = f(x - h) \quad h > 0$$

$$y = (x + 7)^2$$

Translation  
7 units left

$$y = (x - -7)^2$$

$$y = f(x - h) \quad h < 0$$

neg

# Reflections

$$y = x^2$$

$$-y = x^2$$

$$\overline{-1} \quad \overline{-1}$$

$$y = -x^2$$

Reflection  
across x-axis

$$y \leftrightarrow -y$$

Negative of  
function

$$y = x^2$$

$$y = (-x)^2$$

Reflection  
across y-axis

$$x \leftrightarrow -x$$

$$f(x) = |x|$$

$$f(x) = |x+2|$$
 Horizontal  
Translation  
2 units left

$$f(x) = |x-3| + 6$$
 Vertical  
Translation  
6 units up  
Horizontal  
Translation  
3 units right

$$f(x) = -|x|$$
 Reflection  
across x-axis.

# Vertical Stretch

$$y = x^2$$

$$y = 2x^2 \quad \text{Vertical Stretch by a factor of 2}$$

$$y = \frac{1}{3}x^2 \quad \text{Vertical Compression.}$$

$$y = \left(\frac{1}{2}x\right)^2 \quad \text{Horizontal Stretch by a factor of 2}$$

$$y = (3x)^2 \quad \text{Horizontal Compression by a factor of } \frac{1}{3}$$

