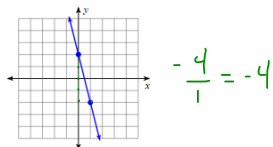


Starter 9.1

Find the slope of each line.

1)



$$m = \frac{\text{rise}}{\text{run}}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope of the line through each pair of points.

* 2) (-6, 4), (9, 16)

$$m = \frac{16 - 4}{9 - (-6)} = \frac{12}{15} = \frac{4}{5}$$

9.1 Rate of Change
& Basic Transformations

Rate of change = slope

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$f(x) = x^2 + 6x$$

Find the rate of change from $x_1 = 3$ to $x_2 = 7$

x	y
3	27
7	91

$$(3)^2 + 6(3) = 27$$

$$(7)^2 + 6(7) = 91$$



$$m = \frac{91 - 27}{7 - 3} = \frac{64}{4} = 16$$

Find the rate of change of the function $f(x) = \sqrt{x}$ from $x_1 = 4$ to $x_2 = 9$

$$y = \sqrt{x}$$

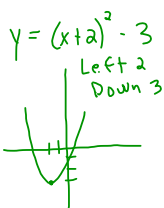
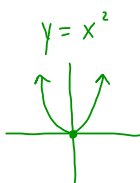
x	y
4	2
9	3

$$\sqrt{4}$$

$$\sqrt{9}$$

$$m = \frac{3 - 2}{9 - 4} = \frac{1}{5}$$

Using Transformations of functions:



Transformations:

$$y = x^3$$

$$y = (x+1)^3 - 4$$

Left 1
Down 4

