

## 6.1 Slope

The slope of a line is the amount of change in the height of the line for every change of one unit to the right.

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

slope of 2 =  $2 / 1$  or  $-2 / -1$   
up 2, right 1 or down 2, left 1

slope of  $-4$  =  $-4 / 1$  or  $4 / -1$   
down 4, right 1 or up 4, left 1

slope of  $-3/2$  =  $3/-2$   
down 3, right 2 or up 3, left 2

The slope between points  $(x_1, y_1)$  and  $(x_2, y_2)$  is

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

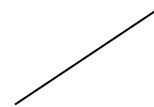
slope

slant

sketch

positive

upward



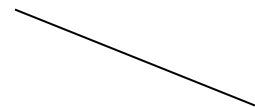
zero

horizontal



negative

downward



none  
(undefined)

vertical



Find the slope of the line that contains the following points:

$(3,-5)$  and  $(1,3)$

$(2,6)$  and  $(3,2)$

$(4,3)$  and  $(-2,3)$

$(5,8)$  and  $(5, -1)$

The slope of every horizontal line is 0.

The slope of every vertical line is undefined.