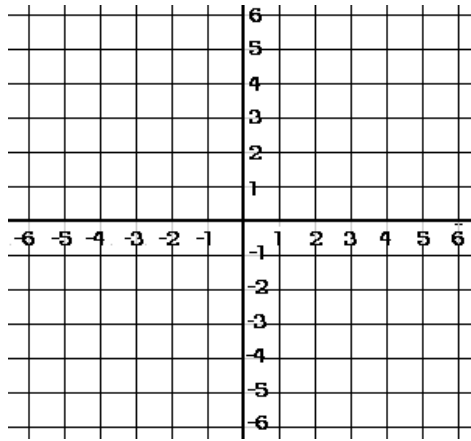


1.4 Slope

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

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

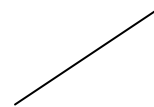
slope

slant

sketch

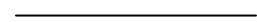
positive

upward



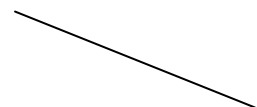
zero

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.