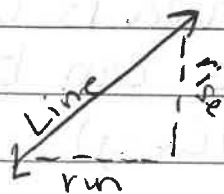


(13)

What is Slope?

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

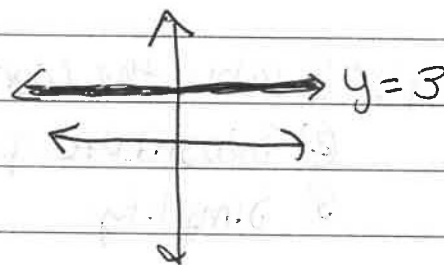
"rate of change"



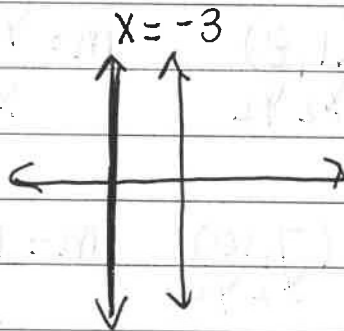
m
↑
Slope

- slope of vertical & horizontal lines

H	0	Y
Horizontal Line	zero Slope	Y-axis



V	Vertical Line
U	Undefined Slope
X	X-axis



Slope-Intercept Form

$$y = mx + b$$

↓
Slope

↓
y-intercept

Slope Formula

Slope formula is used when given two points.
two points can be given as the following:

① $(x_1, y_1)(x_2, y_2)$

② a table

③ a graph

Ex) Given a line that passes through $(3, -6)$ & $(1, 8)$

Steps: ① label the coordinates $(x_1, y_1)(x_2, y_2)$

② Substitute points into the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$

③ Simplify

$$\begin{array}{cc} (3, -6) & (1, 8) \\ x_1, y_1 & x_2, y_2 \end{array} \quad m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - (-6)}{1 - 3} = \frac{14}{-2} \quad m = -7$$

$$\begin{array}{cc} (4, 7) & (7, 10) \\ x_1, y_1 & x_2, y_2 \end{array} \quad m = \frac{10 - 7}{7 - 4} = \frac{3}{3} \quad m = 1$$

Ex)

X	Y
0	3
2	11
4	19
6	27
8	35

 * Pick any two points

$$\begin{array}{cc} (2, 11) & (8, 35) \\ x_1, y_1 & x_2, y_2 \end{array} \quad m = \frac{35 - 11}{8 - 2} = \frac{24}{6} = m = 4$$

$$m = \frac{8}{2} = 4$$