2.3 Slope

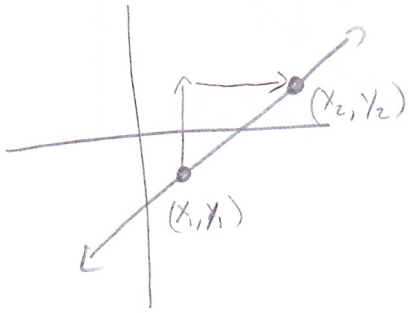
Day 1

Goal: Find & use slope of a line

All linear equations => Graph is a line

All lines have steepness or slope

$$\text{Slope} = \frac{\text{change in } y\text{-coordinates}}{\text{" " } x\text{-coordinates}}$$



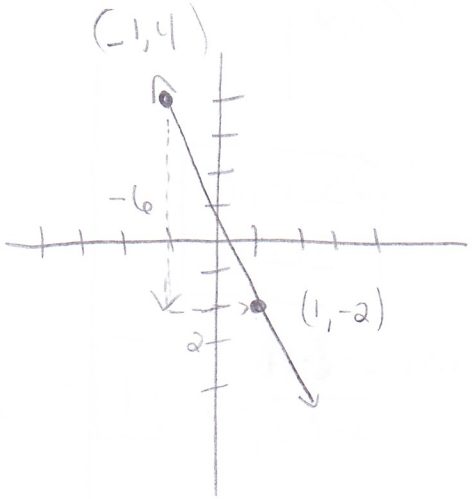
$$m = \frac{y_2 - y_1}{x_2 - x_1} \qquad \frac{\text{Rise}}{\text{Run}} = \frac{\updownarrow}{\leftrightarrow}$$

Ex 1 Find the slope of the line that passes through $(-1, 4)$ & $(1, -2)$, then graph the line.

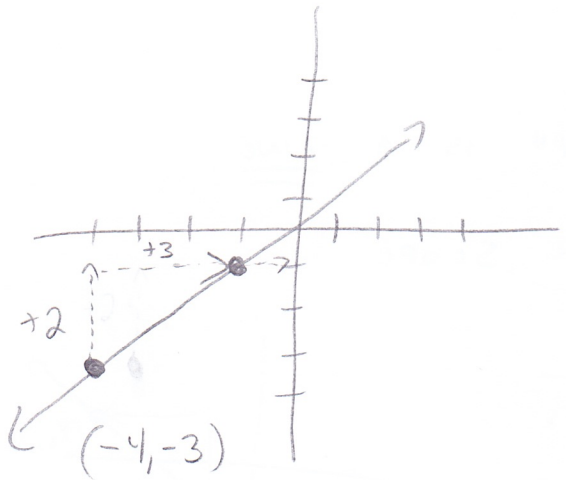
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

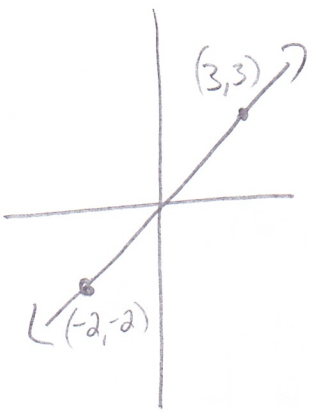
$$\frac{-2 - 4}{1 - (-1)} = \frac{-6}{2} = -3$$

Slope is $\boxed{-3}$ or $\boxed{\frac{-3}{1}}$



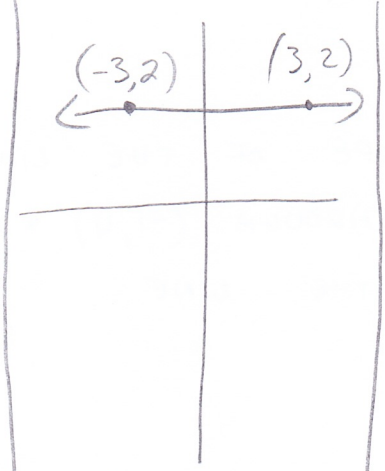
Ex 2 | Graph line passing through $(-4,-3)$ w/ slope of $\frac{2}{3}$. $\updownarrow$ $\longleftrightarrow$





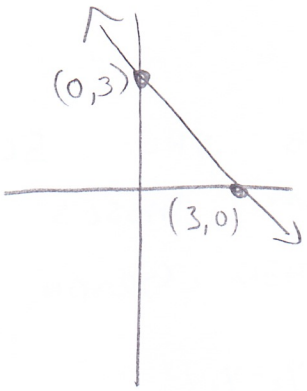
POSITIVE SLOPE

$m = \frac{3-(-2)}{3-(-2)} = \frac{1}{1} = \boxed{1}$



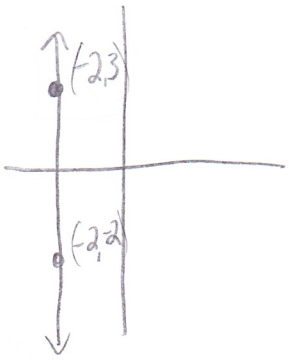
ZERO SLOPE

$m = \frac{2-2}{-6} = \frac{0}{6} = \boxed{0}$



NEGATIVE SLOPE

$m = \frac{3-0}{0-3} = \frac{3}{-3} = \boxed{-1}$



UNDEFINED

WHY??

$m = \frac{3-(-2)}{-2-(-2)} = \frac{5}{0}$

HW: P5 72

15-21 ODD

32-36 EVEN