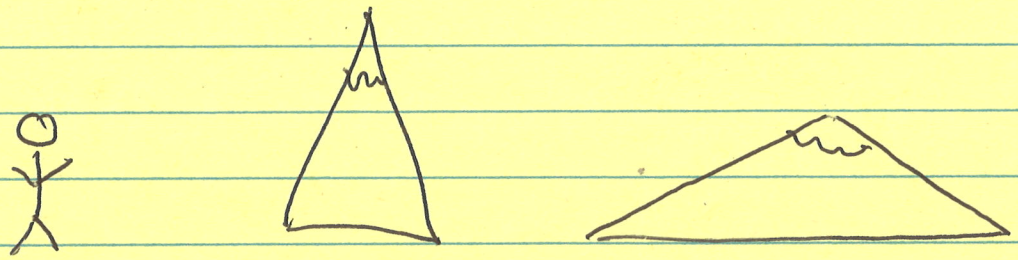
Lecture 09/08/23 The Slope of a Line



Slope measures steepness of lines! How do we calculate it?

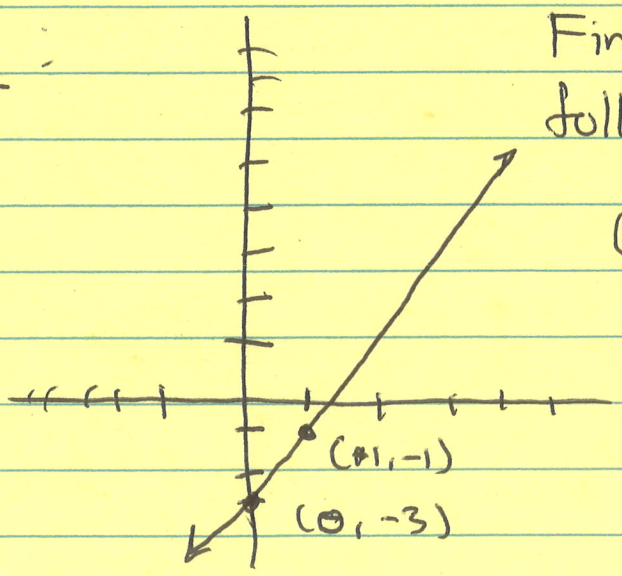
① Take any to points on your line $(x_1, y_1)$ and $(x_2, y_2)$.

② $m = \text{Slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\Delta y}{\Delta x}$.

Ex: Find the slope of the line passing through $(11, 6)$ and $(-2, 3)$

$$m = \frac{6-3}{11-(-2)} = \boxed{\frac{3}{13}}$$

Ex:

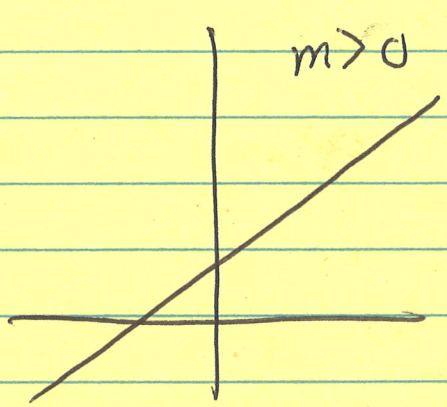



Find the slope of the following line.

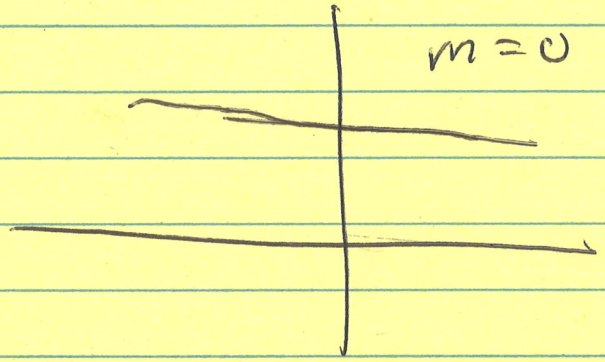
① identify two points

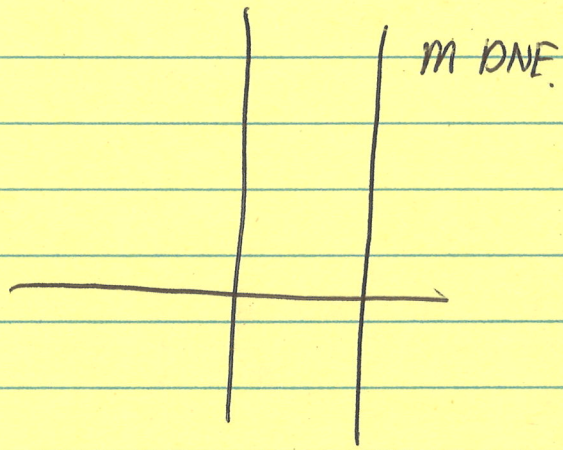
$$\frac{-3-(-1)}{0-1} = 2$$

Positive vs. Neg slope








Ex: Find two pts that satisfy the linear equation below. Then ~~graph the equation.~~ find the slope of the line.

$4x+5y=18$

① Set $x=0$, solve for $y$. $5y=\frac{18}{5}$, so $(0,\frac{18}{5})$ is a point

② Set $y=0$ solve for $x$ $x=\frac{18}{4}$, so $(\frac{18}{4},0)$ is a point

$$m=\frac{\frac{18}{5}}{\frac{18}{4}}=\boxed{\frac{4}{5}}$$

Ex Graph the line with slope $-\frac{1}{2}$ that goes through $(2, -3)$