

# Summary of Graphing Lines

## In Slope-Intercept Form

### Key Concept: Slope-Intercept Form

$$y = mx + b$$

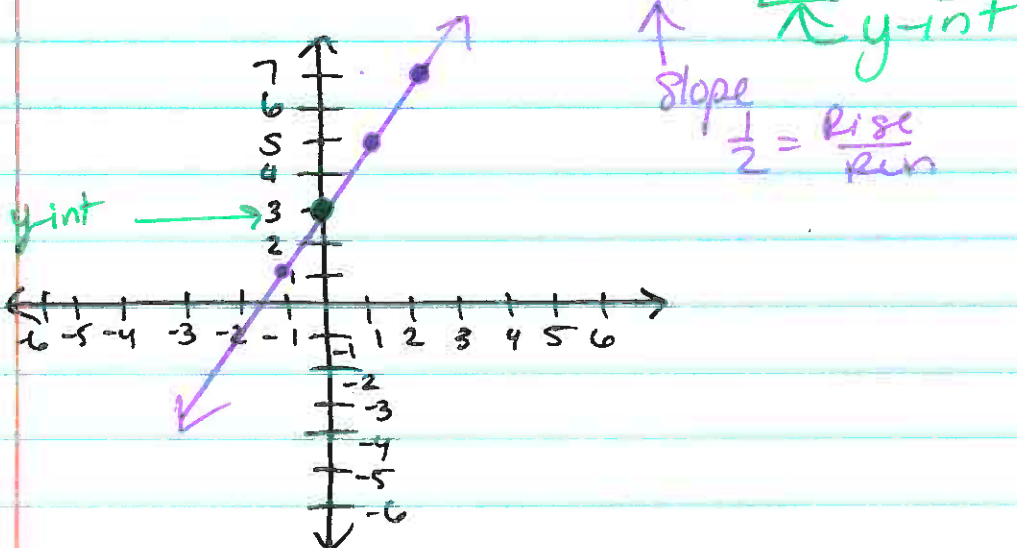
$m$  is the slope, where  $\text{slope} = \frac{\text{Rise}}{\text{Run}} = \frac{\text{change in } y}{\text{change in } x}$

$b$  is the y-intercept, where it crosses the y-axis

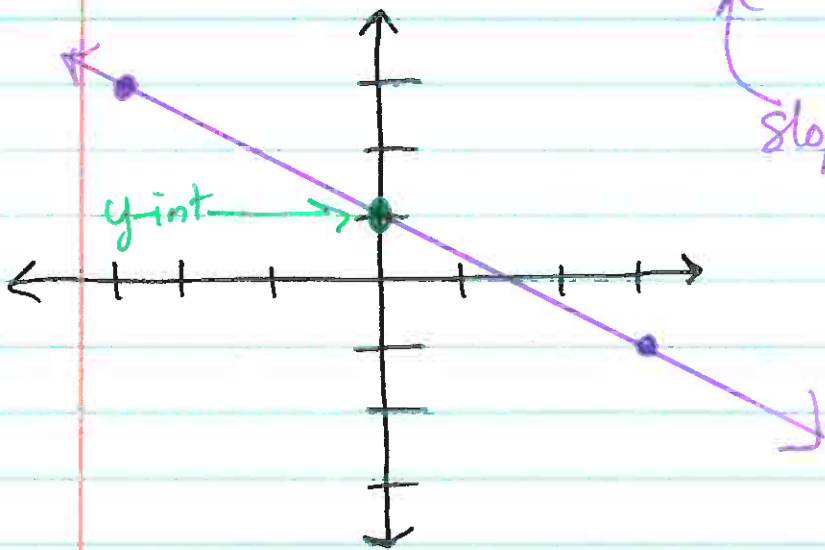
### Steps to Graph

- ① Graph the y-intercept (b-value)
- ② Apply the slope from the y-intercept
- ③ Draw line connecting points

Example:  $y = \frac{1}{2}x + 3$

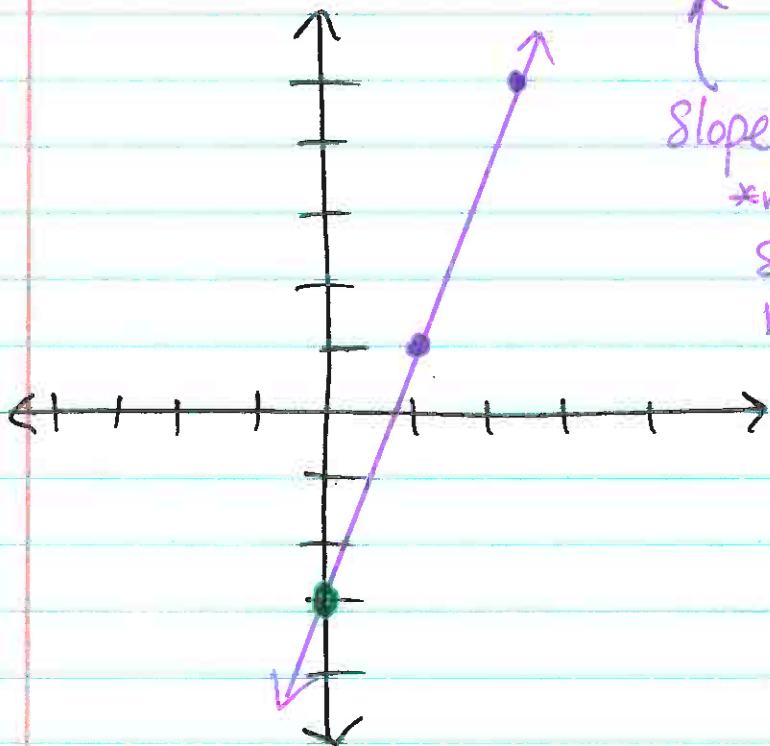


Example 2:  $y = -\frac{2}{3}x + 1$



Slope =  $-\frac{2}{3} = \frac{\text{Rise}}{\text{Run}}$   
can be either  $-\frac{2}{3}$  or  $\frac{2}{3}$

Example 3:  $y = 4x - 3$

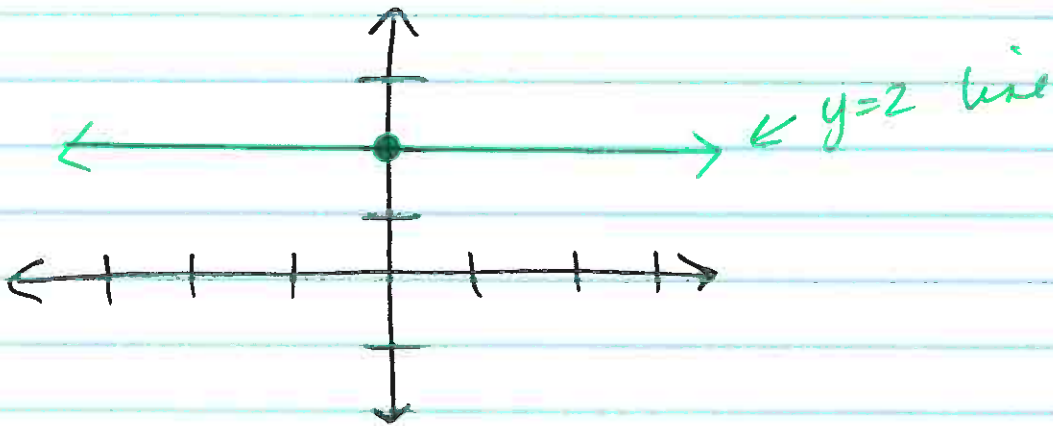


Slope =  $4 = \frac{4}{1} = \frac{\text{Rise}}{\text{Run}}$   
\*make whole number slopes a fraction by dividing by 1

## Special Case Lines

① Horizontal lines  
 $y = \text{some number}$

Ex)  $y = 2$



② Vertical lines  
 $x = \text{some number}$

Ex)  $x = 2$

