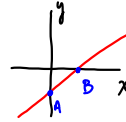


Review of Linear Equations

$$y = mx + b$$

↓ slope
↓ y-intercept



$$m = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

\* need 2 points to calculate your slope

\* y-intercept is where the line crosses the y-axis ( $x=0$ )

\* x-intercept is where the line crosses the x-axis ( $y=0$ )

Example

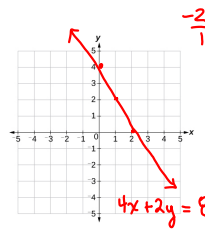
Graph  $4x + 2y = 8$

① Rearrange to  $y = mx + b$

$$\frac{2y}{2} = \frac{-4x + 8}{2}$$

$$y = -2x + 4$$

$(y = mx + b)$



② Use the x and y-intercepts

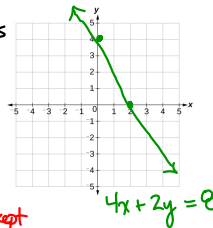
y intercept (let  $x=0$ )

$$4x + 2y = 8$$

$$4(0) + 2y = 8$$

$$2y = 8$$

$$y = 4 \leftarrow \text{y-intercept}$$



To find x-intercept ( $y=0$ )

$$4x + 2y = 8$$

$$4x + 2(0) = 8$$

$$4x = 8$$

$$x = 2 \leftarrow \text{x-intercept}$$

Example

Find the equation of a line with slope  $3^m$  and passing through  $(2, 1)$

$(x, y)$   $y = mx + b$

$$1 = 3(2) + b$$

$$1 = 6 + b$$

$$b = -5$$

$y = 3x - 5$

OR point-slope

$$(y - y_1) = m(x - x_1)$$

$$(y - 1) = 3(x - 2)$$

$$y - 1 = 3x - 6$$

$$y = 3x - 5$$

$-\frac{3}{5}$  and  $\frac{5}{3}$   
negative reciprocals.

parallel lines  
⇒ same slope

perpendicular lines  
⇒ slopes are negative reciprocals

$-\frac{1}{2}$  and  $2$

## Attachments

---

FM11TR\_6\_BLM.pdf