

Find equations of lines passing through 2 points (x_1, y_1) and (x_2, y_2) .

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

Example Find an equation of a line passing through the points $(-2, 5)$ and $(3, -4)$.

$$m = \frac{-4 - 5}{3 - (-2)} = \frac{-9}{5}$$

$$y = mx + b$$

$$5 = -\frac{9}{5}(-2) + b$$

$$5 = \frac{18}{5} + b$$

$$5 - \frac{18}{5} = b$$

$$\frac{7}{5} = b \Rightarrow \text{Our equation is } y = -\frac{9}{5}x + \frac{7}{5}$$