

General Form

Formula  $Ax + By + C = 0$

$A, B, C \rightarrow$  numbers

$(x, y) \rightarrow$  coordinates

$A \rightarrow$  must always be a positive number

Find the value of  $x$  or  $y$ .

$(x, -3) \text{ and } (-5, 6)$  slope  $\frac{3}{4}$

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

$$\frac{3}{4} = \frac{6 - (-3)}{-5 - x}$$

$$\frac{3}{4} \times \frac{9}{-5 - x}$$

$$3(-5 - x) = 4 \times 9$$

$$-15 - 3x = 36$$

$$-3x = 51$$

$$x = -17$$

$(-5, y) \text{ and } (0, -3)$  slope  $\frac{2}{5}$

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

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

$$\frac{2}{5} \times \frac{-3 - y}{5}$$

$$10 = 5(-3 - y)$$

$$10 = -15 - 5y$$

$$25 = -5y$$

$$-5 = y$$

A  $(-5, -5) \text{ and } (0, -3)$  slope  $\frac{2}{5}$

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

$$\frac{2}{5} = \frac{-3 - (-5)}{x_2 - (-5)}$$

$$\frac{2}{5} \times \frac{y + 5}{x + 5}$$

$$2(x + 5) = 5(y + 5)$$

$$2x + 10 = 5y + 25$$

$$2x - 5y - 15 = 0$$

$(4, -1) \text{ and } (1, 0)$  slope  $-\frac{1}{3}$

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

$$-\frac{1}{3} = \frac{y_2 - (-1)}{x_2 - 4}$$

$$-\frac{1}{3} \times \frac{y + 1}{x - 4}$$

$$-1(x - 4) = 3(y + 1)$$

$$-x + 4 = 3y + 3$$

$$-x + 3y - 1 = 0$$

B  $(1, 0) \text{ and } (0, -3)$  slope  $-\frac{1}{3}$

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

$$-\frac{1}{3} = \frac{y_2 - 0}{x_2 - 1}$$

$$-\frac{1}{3} \times \frac{y}{x - 1}$$

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

$$-x + 1 = 3y$$

$$x + 3y - 1 = 0$$

2)  $(1, 2) \text{ and } (-1, -3)$  slope  $\frac{5}{2}$