

Bellwork

① Identify the slope and co-ordinates of $y - 21 = \frac{8}{-5}(x + 16)$

② Write the equation of the line that has a slope of $\frac{2}{3}$ and co-ord. $(-5, 3)$.

$$\textcircled{1} \quad y - 21 = \left(\frac{-8}{5} \right) (x + 16)$$

$$\text{Slope} = \frac{-8}{5}$$

Co-ord. $(-16, 21)$

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

$$\textcircled{2} \quad m = \frac{2}{3}$$

Co-ord $(-5, 3)$
 x, y

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

A (3, 2)

B (-1, -2)

(0, 11) / (0, 7)

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

$$\frac{4}{4} = 1$$

-15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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

B $y + 2 = (x + 1)$

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

$$(3, 2)$$

y-int
 $(0, -1)$

$$y = mx + b$$

use slope-int.
form and plug
in your values

$$\begin{array}{l} 2 = m(3) + b \\ 2 = 3m + b \\ 1 = 3m \\ m = \frac{1}{3} \end{array}$$

for $x, y,$ and m .
Solve for b .

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

\nearrow
 \emptyset

Solve for y
when $x = 0$.

$$y - 2 = (0 - 3)$$

$$y - \cancel{2} = -3 + \cancel{2}$$

$$y = -1$$

y -int.
 $(0, -1)$

$$(-2, 2)$$
$$\rightarrow (1, 1)$$

write in slope-point form and find the y-intercept.

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

$$m = \frac{1 - 2}{1 + 2}$$

$$1 + 2$$

$$m = \frac{-1}{3}$$

$$y - y_1 = \frac{-1}{3}(x - x_1)$$

$$y - 1 = \frac{-1}{3}(x - 1) \leftarrow$$

$$y - 2 = \frac{-1}{3}(x + 2) \leftarrow$$

$$y = mx + b$$

$$(1, 1)$$

$$m = \frac{1}{3}$$

$$\frac{1}{3} = \frac{1}{3}(1) + b$$

~~$$\frac{1}{3} = \frac{1}{3} + b$$~~

$$\frac{1}{3} - \frac{1}{3} = b \Rightarrow \frac{0}{3} = b$$

$(-2, 2)$
 $y = mx + b$

$$2 = m(-2) + b$$

$$2 = -2m + b$$

$$2 = -2m + b$$

$$\frac{2}{3} = \frac{2}{3} + b$$

$$b = \frac{4}{3}$$

$$\rightarrow (1, 3)$$
$$(4, 5)$$

$$m = \frac{5-3}{4-1}$$

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

$$m = \frac{2}{3}$$

$$(1, 3) \quad m = \frac{2}{3}$$

$$y = mx + b$$

$$\frac{9}{3} - \frac{2}{3} = \frac{7}{3}$$

$$(0, \frac{7}{3})$$

$$3 = \frac{2}{3}(1) + b$$

$$3 = \frac{2}{3} + b$$

$$3 - \frac{2}{3} = b$$

$$\rightarrow (-2, -5)$$

$$\rightarrow (1, 1)$$

$$m = \frac{2}{1}$$

$$\frac{1+5}{1+2} = \frac{6}{3} = \frac{2}{1}$$

$$(0, -1)$$

$$\left. \begin{aligned} y+5 &= 2(x+2) \\ y-1 &= 2(x-1) \end{aligned} \right\}$$

$$y-1 = 2(0-1)$$

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

$$y = -1$$

$$y-1 = -\frac{1}{3}(x-1)$$

$$\text{let } x=0$$

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

$$y-1 = -\frac{1}{3}(-1)$$

$$\text{w/ } \begin{matrix} (2) \\ (3) \end{matrix} \quad \text{w/ } \begin{matrix} (2) \\ (3) \end{matrix}$$