Name:_____

Find the equation of the line passing through (-3,8) and (5,11).

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

$$= \frac{11 - 8}{5 + 3}$$

$$= \frac{3}{8}$$

$$y = mx + b$$

$$\boxed{y = \frac{3}{8}x + b}$$

Sub in either point.

$x = 5, \ y = 11$:

$$11 = \frac{3}{8}(5) + b$$

$$11 = \frac{15}{8} + b$$

$$\frac{88}{8} - \frac{15}{8} = b$$

$$\frac{73}{8} = b$$

$$\boxed{y = \frac{3}{8}x + \frac{73}{8}}$$

$x_1 \ y_1 \quad x_2 \quad y_2$