



Deriving $y = mx + b$ (page 1)

Complete the steps to derive the equation for a nonproportional linear relationship by using the slope formula.

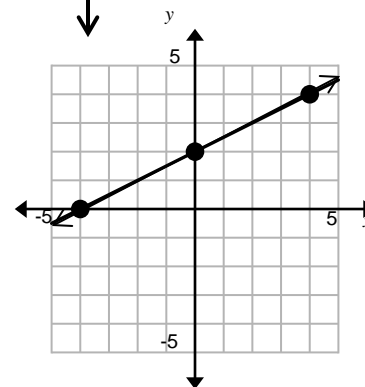
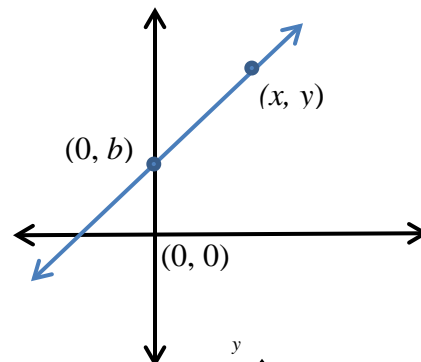
$$\frac{y_2 - y_1}{x_2 - x_1} = m \quad \text{slope formula}$$

$$\frac{y - b}{x - 0} = m \quad (x_1, y_1) = (0, b) \text{ and } (x_2, y_2) = (x, y)$$

$$\frac{y - b}{x} = m \quad \text{simplify}$$

$$y - b = m \cdot x \quad \text{Multiplication Property of Equality}$$

$$y = mx + b$$



Problem: Write an equation in the slope-intercept form for the graph shown.

The y-intercept is 2. From (0, 2), you can move up 2 units and to the right 4 units to reach another point on the line. That makes

the slope $\frac{2}{4} = \frac{1}{2}$.

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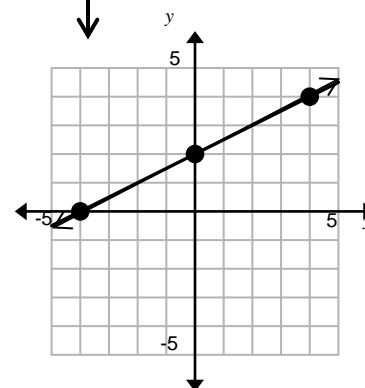
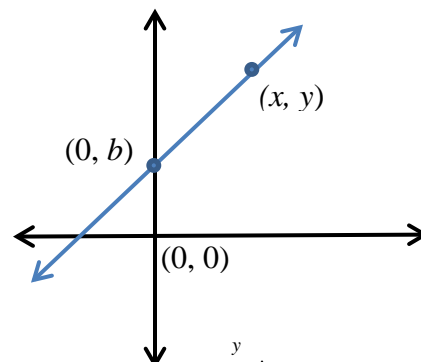
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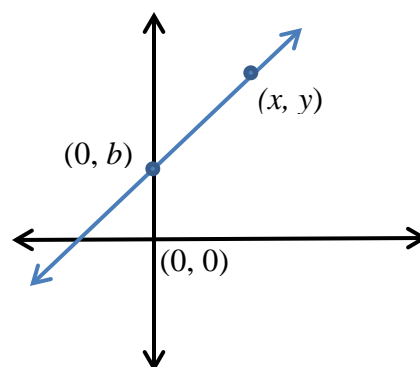
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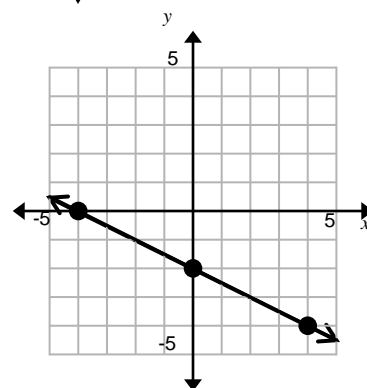
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Deriving $y = mx + b$ (page 2)

Complete the steps to derive the equation for a nonproportional linear relationship by using the slope formula

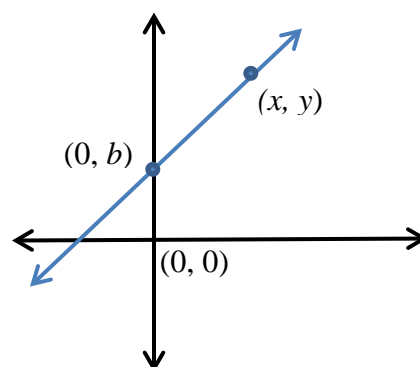


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Deriving $y = mx + b$ (page 2)

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