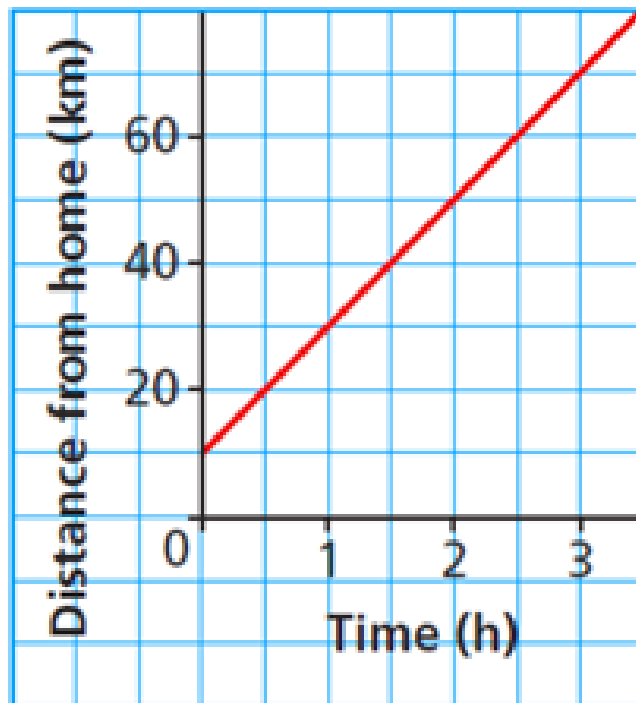


Reminder

Graph of a Bicycle Journey



- What does the vertical intercept represent?
- What does the slope of the line represent?

6.4 Slope-Intercept Form of the Equation of a Linear Function

Lesson Focus

Relate the graphs of a linear function to its equation in slope-intercept form

Slope-Intercept Form

- **Slope-intercept** form of a linear function contains the **slope** and the **y-intercept**

$$y = mx + b$$

where **m** is the **slope** and **b** is the **y – intercept**

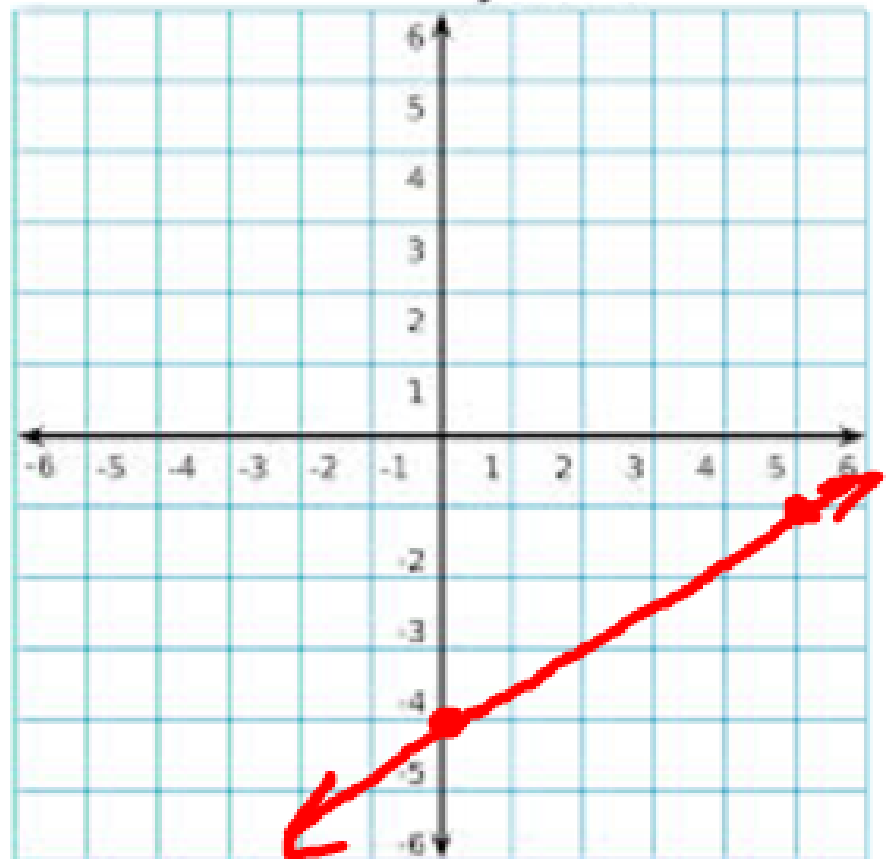
Example

The graph of a linear function has slope $\frac{3}{5}$ and y -intercept -4 .

Write an equation for this function.

$$y = mx + b$$

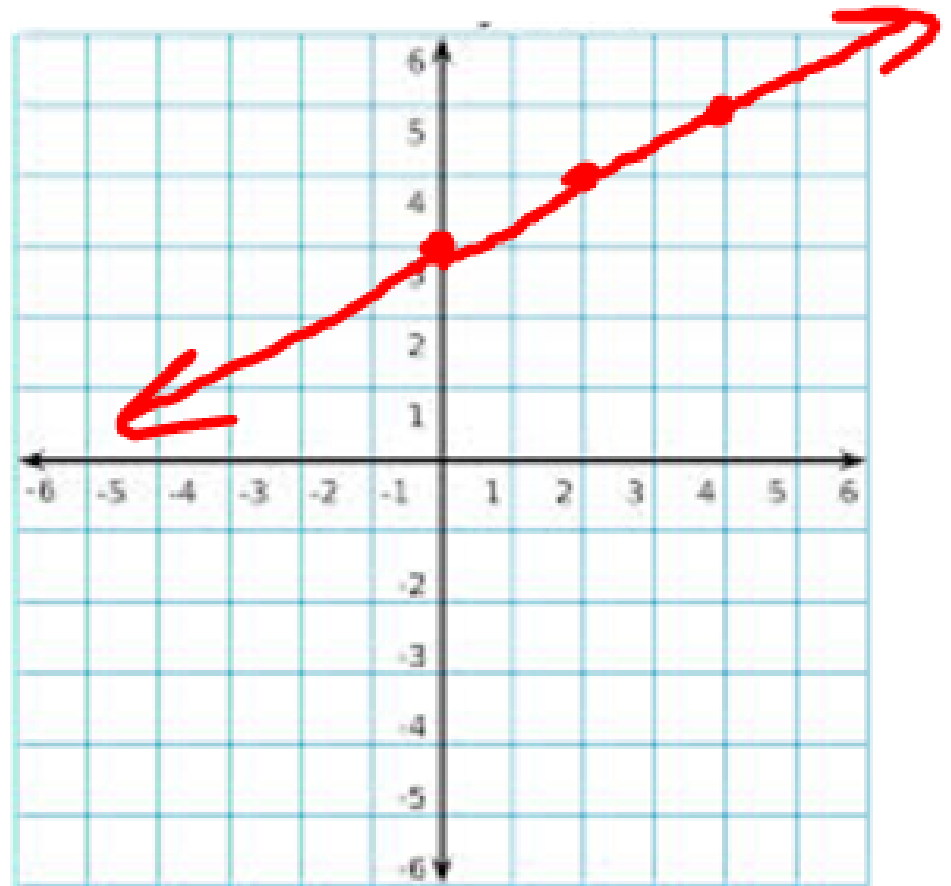
$$y = \frac{3}{5}x - 4$$



Example

Graph the linear function with equation: $y = \frac{1}{2}x + 3$

$$y = \frac{1}{2}x + 3$$
$$m = \frac{1}{2} \quad b = 3$$



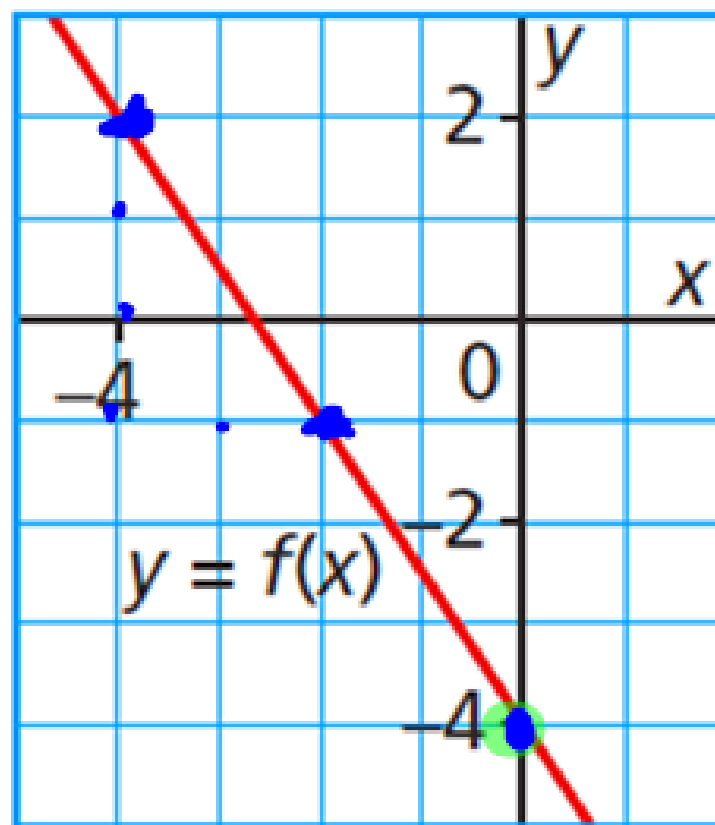
Example

Write an equation to describe this function.

Verify the equation.

$$y = mx + b$$

$$y = -\frac{3}{2}x - 4$$



Example

The student council sponsored a dance. A ticket cost \$5 and the cost for the DJ was \$300.

- a) Write an equation for the profit, P dollars, on the sale of t tickets.

$$P(t) = 5t - 300$$

- b) Suppose 123 people bought tickets. What was the profit?

- c) Suppose the profit was \$350. How many people bought tickets?

- d) Could the profit be exactly \$146? Justify the answer.

$$\begin{aligned} \text{b) } P(123) &= 5(123) - 300 \\ &= 615 - 300 = \$315 \end{aligned}$$

$$350 = 5t - 300$$

$$\frac{650}{5} = \frac{5t}{5}$$

$$130 = t$$

$$146 = 5t - 300$$

$$\frac{446}{5} = \frac{5t}{5}$$

$$89.2 = t$$

Homework

- **P. 362-364**

4, 5, 6, 8, 11, 12, 19, 21, 22

for 4, 5, and 6 only do every second letter