Module 6 Lesson 4
Are You Ready? Possible Solutions

1. Since all *y*-intercepts cross the *y*-axis, they all have *x*-coordinates equal to 0.

2. An independent variable is the variable for which values are selected, whereas the dependent variable has values that depend on the independent variable.

3. a. The independent variable is time; the dependent variable is distance. The units of the slope are km/h.

   b. The independent variable is distance; the dependent variable is gasoline volume. The slope units are L/km.

   c. The independent variable is the number of kilometres driven, and the dependent variable is the cost. The slope units are dollar per kilometre driven.

4. a. f(5) = 45

   b.
$$\begin{aligned} f(x) &= -9x + 90 \\ 0 &= -9x + 90 \\ 9x - 90 &= 0 \\ 9x &= 90 \\ \frac{9x}{9} &= \frac{90}{9} \\ x &= 10 \end{aligned}$$

5. a.
$$\begin{aligned} 25 &= 1 + 3x \\ 25 - 1 &= 1 + 3x - 1 \\ 24 &= 3x \\ \frac{24}{3} &= \frac{3x}{3} \\ x &= 8 \end{aligned}$$

   b.
$$\begin{aligned} 2x - 5 &= -4x + 31 \\ 2x - 5 + 5 + 4x &= -4x + 31 + 5 + 4x \\ 2x + 4x &= 31 + 5 \\ 6x &= 36 \\ \frac{6x}{6} &= \frac{36}{6} \\ x &= 6 \end{aligned}$$

c. $\frac{5}{9}x+3=18$

$\frac{5}{9}x+3-3=18-3$

$\frac{5}{9}x=15$

$\frac{9}{5}\left(\frac{5}{9}x\right)=\frac{9}{5}(15)$

$x=27$