

CW: 3.3.9

Name: _____ Hr: _____

1. Susanne saves \$14 per week. In 5 weeks, she has \$120.

a. Identify the independent variable. (x) # of weeks

b. Identify the dependent variable. (y) \$ saved

c. Write an equation, in slope-intercept form, to represent this situation.

$$m = 14$$

$$\begin{matrix} \text{weeks} & \text{\$} \\ (5, 120) \\ x & y \end{matrix}$$

$$y = mx + b$$

$$120 = 14(5) + b$$

$$120 = 70 + b$$

$$\begin{array}{r} -70 & -70 \\ \hline 50 = b \end{array}$$

$$y = 14x + 50$$

d. Use your equation to determine how much money Susanne will have saved after 104 weeks (2 years).

Lx, find y (\$)

$$y = 14x + 50$$

$$y = 14(104) + 50$$

$$y = 1456 + 50$$

$$\boxed{\$1506}$$

e. Use your equation above to determine the number of weeks it will take Susanne to save \$218.

Ly, find x

$$218 = 14x + 50$$

$$\begin{array}{r} -50 & -50 \\ \hline 168 = 14x \\ \hline 12 = x \end{array}$$

$$\boxed{x = 12 \text{ weeks}}$$

2. On average, your parents drive 1500 miles per month. After owning the car for 7 months, the car has 10,750 miles on it.

a. Identify the independent variable. (x) # of months

b. Identify the dependent variable. (y) # of miles

c. Write an equation, in slope-intercept form, to represent this situation.

$$m = 1500$$

$$y = mx + b$$

$$10,750 = 1500(7) + b$$

$$\begin{matrix} (7, 10,750) \\ x & y \end{matrix}$$

$$10,750 = 10,500 + b$$

$$\begin{array}{r} -10,500 & -10,500 \\ \hline 250 = b \end{array}$$

$$\boxed{y = 1500x + 250}$$

d. Use your equation to determine the number of miles that will be on the car if your parents drive the car for 60 months (5 years).

x

$$y = 1500(60) + 250$$

$$= 90,000 + 250$$

$$y = 90,250 \text{ miles}$$

e. Use your equation to determine the number of months that your parents have been driving the car if it has 18,250 miles on it.

Ly

$$18,250 = 1500x + 250$$

$$\begin{array}{r} -250 & -250 \\ \hline 18,000 = 1500x \\ \hline 12 = x \end{array}$$

$$\boxed{x = 12 \text{ months}}$$