

Warm up- Use the following equations to evaluate the function at the given values. (pg 36 in workbook)

- 1. $y = 3x$; Find the value when $x = 5$ and $y = 12$**

$$y = 3(5)$$

$$\boxed{y = 15}$$

$$\begin{array}{r|l} 12 = 3x & \\ \hline 3 & 3 \\ \hline 4 = x & \end{array}$$

- 2. $y = 40x$; Find the value when $x = 3$ and $y = 200$**

$$y = 40(3)$$

$$\boxed{y = 120}$$

$$\begin{array}{r|l} 200 = 40x & \\ \hline 40 & 40 \\ \hline 5 = x & \end{array}$$

$$5 = x$$

$$\boxed{x = 5}$$

4.4 Linear Word Problems

- This section is going to require you to read given information and determine what information is useful to help you solve the problem
- You can either underline or highlight the information you think is important
- Make sure you answer ALL the questions asked of you

An airplane headed to New York is taking off. You must be wearing your seatbelt until the plane is 10,000 feet above the ground. The plane's altitude increases 100 feet every 10 seconds.

a. Write an equation that relates the distance the plane is from the ground, y , to the amount of time that has passed, x , since the plane took off.

y = distance from ground

x = time

$$m = \frac{100 \text{ ft}}{10 \text{ sec}}$$

$$m = 10$$

$$y = mx$$

↑
slope

$$y = 10x$$

An airplane headed to New York is taking off. You must be wearing your seatbelt until the plane is at 10,000 feet above the ground. The plane's altitude increases 100 feet every 10 seconds.

b. After two minutes have passed, how high is the plane above the ground?

$$y = \text{dist.}$$

$$x = \text{time}$$

$$y = 10x$$

$$x = 120$$

$$y = 10(120)$$

$$y = 1200 \text{ ft}$$

An airplane headed to New York is taking off. You must be wearing your seatbelt until the plane is at 10,000 feet above the ground. The plane's altitude increases 100 feet every 10 seconds.

c. How long will it be until you no longer have to wear your seatbelt?

$y = \text{distance}$

$x = \text{time}$

$$y = 10x$$
$$y = 10,000$$

$$\frac{10,000}{10} = \frac{10x}{10}$$

$$1000 = x$$

1,000 seconds

Heather wants to buy a new computer for \$750. Her job pays her \$50 a week.

a. Write an equation that relates the amount of money Heather has, y , to the amount of weeks that have passed, x , since she started her job.

y = money she has
 x = time (weeks)

$$y = mx$$

↑
rate

$$y = 50x$$

Heather wants to buy a new computer for \$750. Her job pays her \$50 a week.

b. After 7 weeks, she decides to count her money to see how close she is to getting her computer. Can you help Heather figure out how much money she has? How much does she have?

$$y = \$$$

$$x = \text{time}$$

$$y = 50x$$

$$x = 7$$

$$y = 50(7)$$

$$y = 350$$

$$\boxed{\$350}$$

Heather wants to buy a new computer for \$750. Her job pays her \$50 a week.

c. How long will it take heather to save up enough money to buy her computer?

$$y = \$$$

$$x = \text{time}$$

$$y = 50x$$

$$y = 750$$

$$\begin{array}{r|l} 750 & 50x \\ \hline 50 & 50 \end{array}$$

$$15 = x$$

15 weeks

$x = \text{time (minutes)}$

$y = \# \text{ cookies}$

$$y = mx$$

$$y = 2x$$

$$\frac{30}{15} = 2$$

$$\frac{300}{2} = \frac{2x}{2}$$

$$300 = y$$

$$x = 150$$

150 minutes

$$45 = x$$

$$y = 2x$$

$$y = 2(45)$$

$$y = 90$$

90 cookies