

Warm up-

Use the following information to evaluate the function at the given values.

1. $y = 3x$ for $x = 5$ and $y = 12$

$$y = 3(5) = \boxed{15 = y}$$

$$\frac{12 = 3x}{3} \quad \frac{\cancel{3}x}{3}$$

2. $y = 40x$ for $x = 3$ and $y = 200$

$$y = 40(3)$$

$$\boxed{y = 120}$$

$$\frac{200 = 40x}{40} \quad \frac{\cancel{40}x}{40}$$

$$\boxed{5 = x}$$

$$\boxed{4 = x}$$

This section is going to require you to read given information and decide 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

Example 1:

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.

$$y = mx$$

$$y = \frac{100}{10}x$$

$$y = 10x$$

$$y = 10x \quad 120 \text{ seconds}$$

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

$$y = 10(120)$$

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

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

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

$$1,000 = x$$

$$1,000 \text{ Sec}$$

Example 2:

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

$$y = mx$$

$$y = \frac{50}{1}x$$

$$y = 50x$$

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?

$$y = 50x$$

$$y = 50(7)$$

$$y = 350 \text{ dollars}$$

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

$$y = 50x$$

$$\frac{750}{50} = \frac{50x}{50}$$

$$15 = x$$

$$15 \text{ weeks}$$

Example 3:

Jiana is making cookies for her friends. She can make 30 cookies every 15 minutes.

- a. Write an equation that relates the amount of cookies Jiana can make, y , to the amount of time, x , it takes her to make them.

$$y = mX$$

$$y = \frac{30}{15}X$$

$$y = 2X$$

$$y = 2x$$

a. If Jiana needs 300 cookies for a party, how long will it take her to make them?

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

150 min

b. If Jiana is baking for 45 minutes, how many cookies will she have?

$$y = 2(45)$$
$$y = 90$$

90 cookies

**Homework: 4.4 Linear Word
Problems Worksheet** *(do 2 problems
before working with a partner)*