

## Algebra 1 - Function Word Problems

1. Johnny gets paid \$25.00 to baby-sit plus \$5.00 for every room he cleans in the house,  $r$ . His total payment is represented by the equation:  $P = 20 + 5r$

- a. Write the equation in function notation

$$P(r) = 20 + 5r$$

- b. Find  $P(4)$

$$P(4) = 40$$

- c. What is the meaning of  $P(4)$  in the context of the problem?

**$P(4)$  means Johnny earns \$40 when he cleans 4 rooms.**

- d. If Johnny earns a total of \$45.00, how many rooms did he clean?

**Johnny cleaned 5 rooms.**

2. You have \$250 in savings at the start of the month. Your job pays a total of \$30 for each day that you work. The bank does not pay interest.

- a. Write an equation representing how much money is in your account for any number of days worked

**Let  $d$  represent the number of days worked. The amount of money in your account,  $S$ , can be represented by the following equation:**

$$S(d) = 250 + 30d$$

- b. What is a reasonable domain for this function?

$$d \in \{0, 1, 2, 3, 4, \dots, 31\}$$

- c. How much money will you have if you work 20 days of the month?

$$S(20) = \$850$$

3. The length of a rectangle is 16 in more than its width. If the perimeter of the rectangle is 5 ft:

a. Write an equation to model the situation

$$60 = 2(w + 16) + 2w$$

b. Find the dimensions of the rectangle

7 in (width) by 23 in (length)

c. Find the area of the rectangle

$$161 \text{ in}^2$$

4. The Uber service charges \$2.50 for a ride, plus \$0.75 per mile after the ride has exceeded 10 miles.

a. Write an equation to model the situation

$$C = 2.50 + 0.75(m - 10) \text{ for } m > 10$$

b. If you have \$11.20 to spend on the ride, how many miles can you travel without exceeding your budget?

21 miles

5. You have \$550 from your job and earn \$25 each week from your job. Your sister has \$500 and earns \$30 each week from her job.

a. Write an equation representing the situation

$$M_{self} = 550 + 25w$$

$$M_{sister} = 500 + 30w$$

b. After how many weeks will you both have the same amount of money?

10 weeks

c. How much money will this be?

\$800