

# 4-5 Reteaching

## Writing a Function Rule

When writing function rules for verbal descriptions, you should look for key words.

| Words that Suggest Addition | Words that Suggest Subtraction | Words that Suggest Multiplication | Words that Suggest Division |
|-----------------------------|--------------------------------|-----------------------------------|-----------------------------|
| plus                        | minus                          | times                             | divided by                  |
| sum                         | difference                     | product                           | quotient                    |
| more than                   | less than                      | of                                | rate                        |
| increased by                | decreased by                   | each                              | ratio                       |
| total                       | fewer than                     | factors                           | half                        |
| in all                      | subtracted by                  | twice                             | a third of                  |

### Problem

Twice a number  $n$  increased by 4 equals  $m$ . What is a function rule that represents the sentence?

$$\underbrace{\text{twice a number } n}_{2n} \quad \underbrace{\text{increased by 4}}_{+4} \quad \underbrace{\text{equals}}_{=} \quad \underbrace{m}_m$$

The function rule is  $2n + 4 = m$ .

### Exercises

Write a function rule that represents each sentence.

- $t$  is 4 more than the product of 7 and  $s$ .
- The ratio of  $a$  to 5 equals  $b$ .
- 8 fewer than  $p$  times 3 equals  $x$ .
- $y$  is half of  $x$  plus 10.
- $k$  equals the sum of  $h$  and 23.
- 15 minus twice  $a$  equals  $b$ .
- $m$  equals 5 times  $n$  increased by 6.
- 17 decreased by three times  $d$  equals  $c$ .
- 5 more than the product of 6 and  $n$  is 17.
- $d$  is 8 less than the quotient of  $b$  and 4.

You can write functions to represent situations and then evaluate the function to determine a particular value.

**Problem**

A sales associate earns \$500 per week plus 4% of his sales. Write a function rule for the amount he makes in a week if he sells  $s$  dollars of merchandise. How much will he make if he sells \$4000 worth of merchandise?

First write the function rule.

$$\underbrace{\text{earnings}}_e \quad \underbrace{\text{equals}}_= \quad 500 \quad \text{plus} \quad \underbrace{4\% \text{ of sales}}_{0.04s}$$

$$= 500 + 0.04s$$

Use this function rule to calculate how much he will make.

$$\begin{aligned} e &= 500 + 0.04s \\ &= 500 + 0.04(4000) \\ &= 700 \end{aligned}$$

He will make \$700.

**Exercises**

11. Twelve cans of peaches are placed into each box. Write a function rule for the number of boxes needed for  $c$  cans. How many boxes are needed for 1440 cans?
  
12. Tara plans to rent a car for the weekend. The cost to rent the car is \$45 plus \$0.15 for each mile she drives. Write a function rule for the total cost of the rental. How much is the rental if she travels 500 miles?
  
13. A plumber charges \$60 for a service call plus \$55 for each hour she works. Write a function rule for the total bill for a plumbing job. What is the total bill for a job that takes the plumber 3 hours of work?
  
14. Tickets to a concert cost \$45 per ticket plus a \$10 processing fee for each order. Write a function rule for the total cost of ordering tickets. What is the total cost to order 6 tickets?