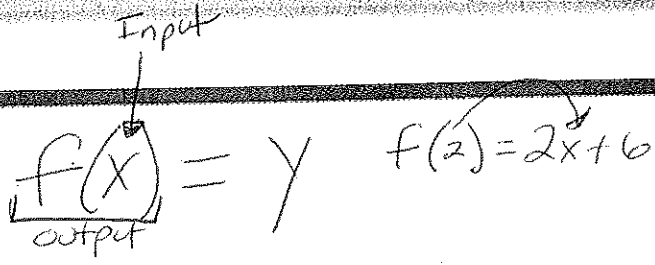


4-5

Writing a Function Rule



Vocabulary



Review

In function notation, you read $f(x)$ as "f of x." You can think of the value " $f(x)$ " as another way of writing "y."

- Write how you would read $h(g)$ aloud. h of g
- Circle the equation that shows function notation.

$f(x) = 2x + 1$
 $xy = f$
 $f(x) - 1$
 $0.8x$

- Carmine wants to buy some peaches. Each peach costs \$.25. Circle the function Carmine could use to find the cost of any number of peaches p .

$0.25c = p(c)$
 $c(p) = 0.25$
 $c(p) = 0.25p$
 $0.25 = c \cdot p(c)$

Vocabulary Builder

rule (noun) root

Main Idea: A mathematical rule is a method or procedure that describes how to solve a problem.

Example: A rule of integer multiplication is that a negative integer multiplied by a negative integer produces a positive integer.

Use Your Vocabulary

Consider the rule $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c}$, for $b, c, d \neq 0$.

- Circle the equation that is an example of this rule.

$\frac{2}{1} \div \frac{1}{2} = \frac{2}{5} \cdot \frac{1}{2}$
 $\frac{2}{5} \div \frac{1}{2} = \frac{2}{5} \cdot \frac{2}{1}$
 $\frac{2}{5} \div \frac{1}{2} = \frac{5}{2} \cdot \frac{1}{2}$

- According to this rule, $\frac{2}{3} \div \frac{6}{9} = \frac{\square}{\square} \cdot \frac{\square}{\square}$.

- Circle the correct words to complete the sentence.

The reason that this rule states that $b, c, d \neq 0$ is because ?.

you cannot multiply by 0
 you cannot divide by 0
 the dividend cannot be 0

Problem 1 Writing a Function Rule

Got It? A landfill has 50,000 tons of waste in it. Each month it accumulates an average of 420 more tons of waste. What is a function rule that represents the total amount of waste after m months? $T = \text{total waste}$

7. Complete the model below. $m = \text{months}$

Relate

total waste

 is

50,000 tons of waste

 plus

420 tons of waste each month

 times

number of months

$$T =$$

Define Let $T =$ the total waste, and let $m =$ the number of months.

Write

T

 =

50,000

 +

420

 ·

m

8. Write an equation to represent the situation.

$$T = 50,000 + 420m$$

Problem 2 Writing and Evaluating a Function Rule

Got It? A kennel charges \$15 per day to board dogs. Upon arrival, each dog must have a flea bath that costs \$12. Write a function rule for the total cost for n days of boarding plus a bath. How much does a 10-day stay cost?

9. Define your variables.

Let $T =$ Total cost

Let $n =$ # of days

10. Now complete the reasoning model below.

Think	Write
I will have to pay \$15 per day to board my dog. How much will that cost for n days?	$15 \cdot n$
I also have to pay \$12 for the flea bath.	+ 12
If I put those together, I can write a formula for the total cost, T .	$T = 15 \cdot n + 12$

11. Now evaluate T for $n = 10$.

$$T = 15n + 12$$

$$T = 15(10) + 12$$

$$= 150 + 12$$

$$T = 162 \text{ or } \boxed{\$162} \quad \text{\#62 dollars}$$

12. The cost of a 10-day stay is \$