

Study Guide and Intervention

Functions

A function rule describes the relationship between the input and output of a function. The inputs and outputs can be organized in a **function table**.

EXAMPLE 1 Complete the function table.

Input (x)	Output (y)
9	■
8	■
6	■

The function rule is $n - 7$. Subtract 7 from each input.

Input	Output
9	$-7 \rightarrow 2$
8	$-7 \rightarrow 1$
6	$-7 \rightarrow -2$

→

Input (x)	Output (y)
9	2
8	1
6	-1

EXAMPLE 2 Find the rule for the function table.

Input (x)	Output (y)
-3	-12
1	4
2	8

Study the relationship between each input and output.

Input	Output
-3	$\times 4 \rightarrow -12$
1	$\times 4 \rightarrow 4$
2	$\times 4 \rightarrow 8$

The output is four times the input. So, the function rule is $4x$.

EXERCISES

Complete each function table.

1.

Input (x)	Output (y)
-1	
2	
4	

2.

Input (x)	Output (y)
-3	
1	
4	

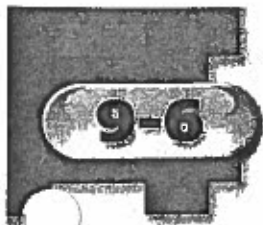
Find the rule for each function table.

3.

Input (x)	Output (y)
-4	-2
2	4
5	7

4.

Input (x)	Output (y)
-4	-2
2	1
6	3

**Practice: Word Problems****Functions**

<p>1. DRAGONS The Luck Dragons that live in the Enchanted Forest weigh $4x$ pounds when they are x-years old. Write a function table that can be used to find the weights of 6-year old, 8-year old, and 10-year old Luck Dragons.</p>	<p>2. ROLLER COASTER Twelve people are able to ride the Serpent of Fire roller coaster at one time. Write a function table that shows the total number of people that have been on the roller coaster after 1, 2, 3, and 4 rides.</p>
<p>3. MOVIES At the local movie theater it costs \$10.00 for 2 students to see a movie. It costs \$15.00 for 3 students, and it costs \$20.00 for 4 students. Let the number of students be the input. What is the function rule that relates the number of students to the cost of tickets?</p>	<p>4. HOMEWORK At Elmwood Middle School, sixth graders spend 1 hour every night doing homework. Seventh graders spend 2 hours, and eighth graders spend 3 hours. Let the students' grade be the input. What is the function rule between the students' grade and the amount of time the students spend on homework every night?</p>
<p>5. BEADS A bead shop sells wooden beads for \$3 each and glass beads for \$7 each. Write a function rule to represent the total selling price of wooden (w) and glass (g) beads.</p>	<p>6. Use the function rule in Exercise 5 to find the selling price of 20 wooden beads and 4 glass beads.</p>