NAME _____ DATE _____ PERIOD ____

9-6

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 ($x - 7$)
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

$\rightarrow$

Input (x)	Output ($x - 7$)
9	2
8	1
6	-1

EXAMPLE 2 **Find the rule for the function table.**

Input (x)	Output (■)
-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 ($2x$)
-1	
2	
4	

2.

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

Find the rule for each function table.

3.

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

4.

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

NAME _____ DATE _____ PERIOD ____

9-6

Practice: Word Problems

Functions

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.	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.
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?	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?
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.	6. Use the function rule in Exercise 5 to find the selling price of 20 wooden beads and 4 glass beads.