LESSON 1.7 Study Guide
For use with the lesson "Represent Functions as Rules and Tables"

GOAL **Represent functions as rules and as tables.**

Vocabulary

A **function** consists of:

- A set called the **domain** containing numbers called **inputs,** and a set called the **range** containing numbers called **outputs.**
- A pairing of inputs with outputs such that each input is paired with exactly one output.

The input variable is called an **independent variable.**

The output variable is called the **dependent variable** because its value depends on the value of the input variable.

EXAMPLE 1 **Identify the domain and range of a function**

The input-output table shows the price of various lobsters at a fish market. Identify the domain and range of the function.

Input (pounds)	1.5	2.3	3.1	4.2
Output (dollars)	$7.80	$11.96	$16.12	$21.82

Solution

The domain is the set of inputs: 1.5, 2.3, 3.1, and 4.2.

The range is the set of outputs: 7.80, 11.96, 16.12, and 21.82.

Exercises for Example 1

Identify the domain and range of the function.

1.

Input	2	5	7	8
Output	5	11	15	17

2.

Input	1	3	4	7
Output	2	8	11	20

LESSON 1.7

LESSON
1.7

Study Guide *continued*
For use with the lesson "Represent Functions as Rules and Tables"

EXAMPLE 2 ## Make a table for a function

The domain of the function $y = x - 3$ is 2, 5, 8, and 11. Make a table for the function, then identify the range of the function.

Solution

x	2	5	8	11
$y = x - 3$	$2 - 3 = -1$	$5 - 3 = 2$	$8 - 3 = 5$	$11 - 3 = 8$

The range of the function is -1, 2, 5, and 8.

Exercises for Example 2

Make a table for the function. Identify the range of the function.

3. $y = 4x$

Domain: 0, 3, 5, and 7

4. $y = 3x - 2$

Domain: 1, 2, 3, and 4

EXAMPLE 3 ## Write a function rule

Write a rule for the function.

Input	3	6	7	10
Output	15	30	35	50

Solution

Let x be the input, or independent variable, and let y be the output, or dependent variable. Notice that each output is 5 times the corresponding input. So, a rule for the function is $y = 5x$.

Exercises for Example 3

Write a rule for the function.

5.

Input	3	5	7	9
Output	14	16	18	20

6.

Input	6	7	8	9
Output	3	3.5	4	4.5

LESSON 1.7