

## Section 1.4 Functions

**Objective:** In this lesson you learned how to evaluate functions and find their domains.

Course Number

Instructor

Date

### Important Vocabulary

Define each term or concept.

**Function**

**Domain**

**Range**

**Independent variable**

**Dependent variable**

### I. Introduction to Functions (Pages 40–42)

A rule of correspondence that relates two quantities is a

\_\_\_\_\_.

In functions that can be represented by ordered pairs, the first coordinate in each ordered pair (the  $x$ -value) is the \_\_\_\_\_ and the second coordinate ( $y$ -value) is the \_\_\_\_\_.

Some characteristics of a function from set  $A$  to set  $B$  are . . .

1)

2)

3)

a

Some common ways to represent functions are . . .

1)

2)

3)

4)

### *What you should learn*

How to determine whether relations between two variables are functions

To determine whether or not a relation is a function, . . .

If any input value of a relation is matched with two or more output values, . . .

**Example 1:** Decide whether the table represents  $y$  as a function of  $x$ .

$x$	-3	-1	0	2	4
$y$	5	-12	5	3	14

## II. Function Notation (Pages 42–43)

The symbol \_\_\_\_\_ is **function notation** for the value of  $f$  at  $x$  or  $f$  of  $x$ , used to describe  $y$  as a function of  $x$ . In this case, \_\_\_\_\_ is the name of the function and \_\_\_\_\_ is the value of the function at  $x$ .

***What you should learn***  
How to use function notation and evaluate functions

**Example 2:** If  $f(w) = 4w^3 - 5w^2 - 7w + 13$ , describe how to find  $f(-2)$ .

A **piecewise-defined function** is . . .

## III. The Domain of a Function (Page 44)

The **implied domain** of a function defined by an algebraic expression is . . .

***What you should learn***  
How to find the domains of functions

For example, the implied domain of the function  $f(x) = \sqrt{5x - 8}$  is . . .

**IV. Applications of Functions** (Pages 45–46)

Describe a real-life situation that can be represented by a function.

*What you should learn*  
 How to use functions to model and solve real-life problems

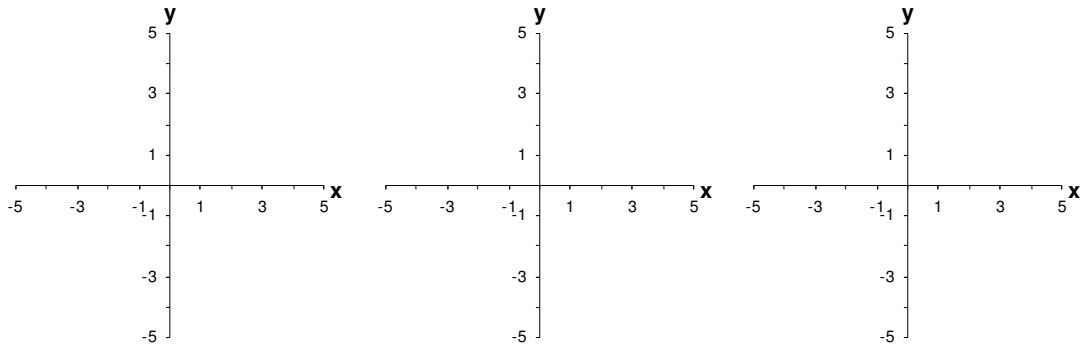
**V. Difference Quotients** (Pages 46–47)

A **difference quotient** is defined as . . .

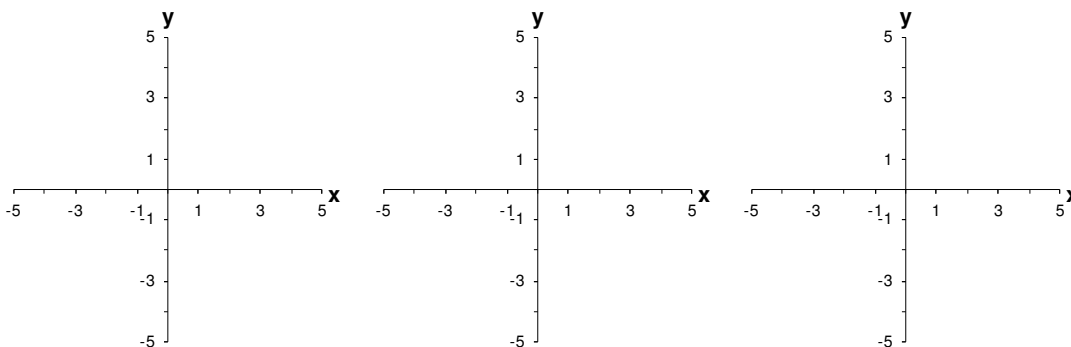
*What you should learn*  
 How to evaluate difference quotients

Where are difference quotients seen?

**Additional notes**



Additional notes



**Homework Assignment**

Page(s)

Exercises