# Chapter 1    Functions and Their Graphs

Course Number

Instructor

Date

## Section 1.1  Functions

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

**Important Vocabulary**    Define each term or concept.

**Function**

**Domain**

**Range**

**Independent variable**

**Dependent variable**

### I. Introduction to Functions  (Pages 74–76)

A rule of correspondence that pairs items from one set with

items from a different set is a _____ .

In functions that can be represented by ordered pairs, the first

coordinate in each ordered pair is the _____ and the

second coordinate is the _____ .

Some characteristics of functions are . . .

    1)


    2)


    3)


To decide whether a relation is a function, . . .


If any input value of a relation is matched with two or more

output values, . . .

> *What you should learn*
> How to decide whether relations between two variables are functions

Some common ways to represent functions are . . .

1)

2)

3)

4)

**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 76–77)

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 output value of the function at the input value *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 78)

If *x* is in the domain of *f*, then *f* is said to be _____ at *x*.
If *x* is not in the domain of *f*, then *f* is said to be _____
at *x*.

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

The **implied domain** of a function defined by an algebraic

expression is . . .

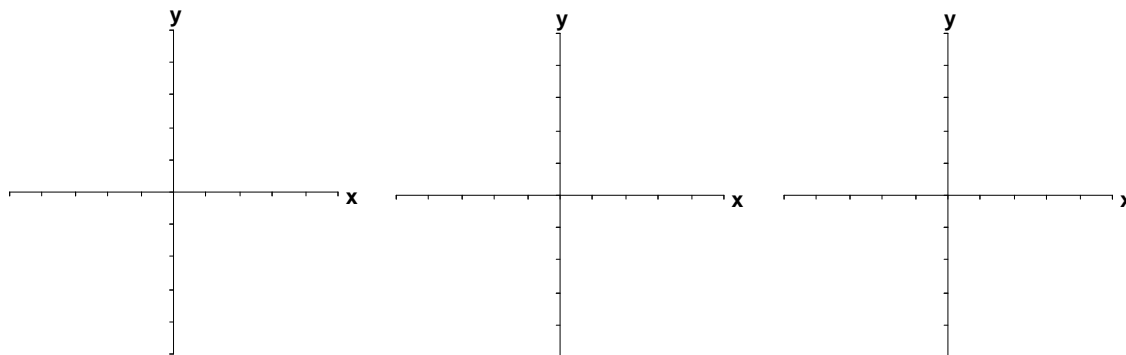For example, the implied domain of the function  $f(x) = \sqrt{5x - 8}$

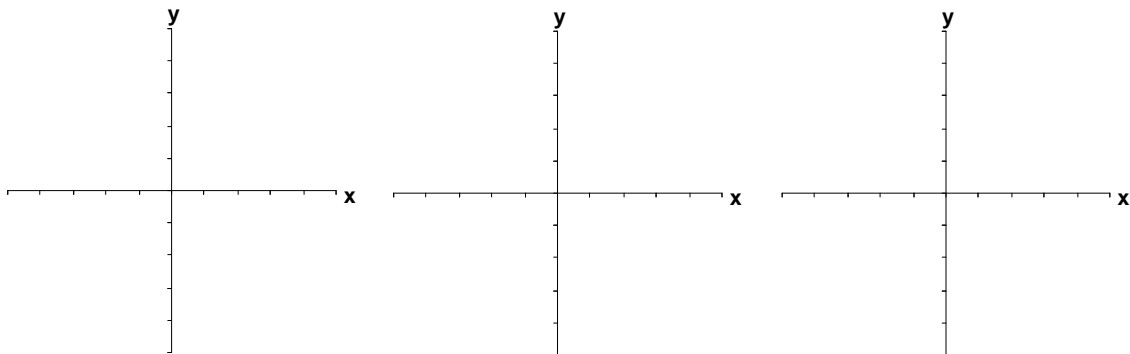is . . .

**IV.  Applications of Functions**  (Pages 79–81)

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

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

**Additional notes**

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

**Additional notes**

y

x

y

x

y

x

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**Homework Assignment**

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Exercises

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