Course Number

Instructor

Date

Section 1.6 A Library of Parent Functions

Objective: In this lesson you learned how to identify and graph various functions.

What you should learn
How to identify and graph linear and squaring functions

I. Linear and Squaring Functions (Pages 60–61)

The graph of the **linear function** $f(x) = ax + b$ is a line with slope _____ and y-intercept at _____.

List several important features of the graph of the linear function $f(x) = ax + b$.

A **constant function** is a special type of linear function having the form _____. The domain of this function is _____ and the range consists of _____.

The **identity function** is a special type of linear function having the form _____. The domain of this function is _____ and the range consists of _____. The identity function has a slope of _____ and a y-intercept of _____. The graph of the identity function is a line for which . . .

List several important features of the U-shaped graph of the **squaring function** $f(x) = x^2$.

II. Cubic, Square Root, and Reciprocal Functions (Page 62)

What you should learn
How to identify and graph cubic, square root, and reciprocal functions

List several important features of the graph of the **cubic function** $f(x) = x^3$.

List several important features of the graph of the **square root function** $f(x) = \sqrt{x}$.

List several important features of the graph of the **reciprocal function** $f(x) = \frac{1}{x}$.

III. Step and Piecewise-Defined Functions (Pages 63–64)

What you should learn
How to identify and graph step and other piecewise-defined functions

Describe the graph of a step function.

The **greatest integer function,** $f(x) = [\![x]\!]$, is defined as . . .

Example : Let $f(x) = [\![x]\!]$, the greatest integer function. Find $f(3.74)$.

List several important features of the graph of the **greatest integer function.**

A piecewise-defined function is defined by . . .

To graph of a piecewise-defined function, . . .

Homework Assignment

Page(s)

Exercises