Section 1.2 Graphs of FunctionsObjective: In this lesson you learned how to analyze the graphs of functions.	Course Number Instructor Date
Important VocabularyDefine each term or concept.	
Graph of a function	
Greatest integer function	
Step function	
Even function	
Odd function	

I. The Graph of a Function (Pages 88–89)

Explain the use of open or closed dots in the graphs of functions.

What you should learn How to find the domains and ranges of functions and how to use the Vertical Line Test for functions

To find the domain of a function from its graph, ...

To find the range of a function from its graph, ...

The Vertical Line Test for functions states . . .

Example 1: Decide whether each graph represents *y* as a function of *x*.



II. Increasing and Decreasing Functions (Page 90)

A function *f* is **increasing** on an interval if, for any x_1 and x_2 in the interval, . . .

A function *f* is **decreasing** on an interval if, for any x_1 and x_2 in the interval, . . .

A function *f* is **constant** on an interval if, for any x_1 and x_2 in the interval, . . .

Given a graph of a function, to find an interval on which the function is increasing . . .

Given a graph of a function, to find an interval on which the function is decreasing . . .

Given a graph of a function, to find an interval on which the function is constant . . .

III. Relative Minimum and Maximum Values (Pages 91–92)

A function value f(a) is called a **relative minimum** of f if . . .

What you should learn How to determine intervals on which functions are increasing or decreasing

What you should learn How to determine relative maximum and relative minimum values of functions A function value f(a) is called a **relative maximum** of f if . . .

The point at which a function changes from increasing to decreasing is a relative ______. The point at which a function changes from decreasing to increasing is a relative

To approximate the relative minimum or maximum of a function using a graphing utility, . . .

Example 2: Suppose a function *C* represents the annual number of cases (in millions) of chicken pox reported for the year x in the United States from 1960 through 2000. Interpret the meaning of the function's minimum at (1998, 3).

IV. Graphing Step Functions and Piecewise-Defined Functions (Page 93)

Describe the graph of the greatest integer function.

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

Example 3: Let $f(x) = \llbracket x \rrbracket$, the greatest integer function. Find f(3.74).

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

V. Even and Odd Functions (Pages 94–95)

A graph is symmetric with respect to the *y*-axis if, whenever (x, y) is on the graph, ______ is also on the graph. A graph is symmetric with respect to the *x*-axis if, whenever (x, y) is on the graph, ______ is also on the graph. A graph is symmetric with respect to the origin if, whenever (x, y) is on the graph, ______ is also on the graph.

A function whose graph is symmetric with respect to the *y*-axis is a(n) ______ function. A function whose graph is symmetric with respect to the origin is a(n) ______ function. The graph of a (nonzero) function cannot be symmetric with respect to the ______.

Additional notes

What you should learn How to identify even and odd functions

