Course Number

Instructor

Date

Section 11.2 Techniques for Evaluating Limits

Objective: In this lesson you learned how to find limits by direct substitution and by using the dividing out and rationalizing techniques.

I. Dividing Out Technique (Pages 791–792)

What you should learn
How to use the dividing out technique to evaluate limits of functions

The validity of the **dividing out technique** stems from . . .

The dividing out technique should be applied only when . . .

An **indeterminate form** is . . .

When you encounter an indeterminate form by direct substitution into a rational function, you can conclude . . .

Example 1: Find the following limit: $\lim_{x \to 3} \frac{x^2 - 8x + 15}{x - 3}$.

II. Rationalizing Technique (Page 793)

What you should learn
How to use the rationalizing technique to evaluate limits of functions

Another way to find the limits of some functions is to first rationalize the numerator. This is called the _____ _____, which means multiplying the numerator and denominator by the conjugate of the numerator.

III. Using Technology (Pages 794–795)

What you should learn
How to approximate limits of functions graphically and numerically

To find limits of nonalgebraic functions, . . .

IV. One-Sided Limits (Pages 795–796)

What you should learn
How to evaluate one-sided limits of functions

A **one-sided limit** is . . .

Existence of a Limit
If f is a function and c and L are real numbers, then $\lim_{x \to c} f(x) = L$

if and only if . . .

V. A Limit from Calculus (Page 797)

What you should learn
How to evaluate limits of difference quotients from calculus

For any x-value, the limit of a *difference quotient* is an expression of the form . . .

Direct substitution into the difference quotient always produces

_____.

Homework Assignment

Page(s)

Exercises