MA104 Lesson 3

Limit of a Function I

Thursday, 17 January, 2008

Outline

Math Attitude Survey

Lets do a Survey!

1. I have to read you a statement!
2. Take a few minuets to fill out the survey

Admin

1. Make sure you have your name on Synchronize

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2. By the end of the week make an appointment for AI with me on Outlook - The appointment can be over the next three weeks it just needs to be scheduled
3. Mathematica 6.0 working by end of week
4. Course Guide - Show them to me - Or get them by the end of the week

Limit of a Sequence

Questions?

Outline

Objectives

1. Understand what it means for a function to have a limit.
2. Approximate the limit of a function using graphic and numeric means.
3. Approximate the left and right-hand limits of a function.

READ

1. Stewart: Section 2.2, pages 88-94 (stop at Infinite Limits).
2. Student Notes.

THINK ABOUT

1. What does it mean for an approximation to be "good enough"?
2. When approximating a quantity, how do we determine if our approximation is sufficient?

DO Problems

1. Section 2.2/ 4, 7, 13, 19

Outline

Definitions

1. Definition 1, pg. 88
2. Definition 2, pg. 93
3. Definition 3, pg. 93

An Example Problem

1. If $f(x) = x^2 - x + 2$, how close to 2 does x have to be to ensure that $f(x)$ is within a distance of 0.1 of the number 4?

Mathematica Code

1. Limit in Mathematica

Outline

1. OBJECTIVES:
   - 1.1 Understand what it means for a function to have an infinite limit.
   - 1.2 Be able to determine when a function decreases/increases without bound.
2. READ:
   - 2.1 Stewart: Section 2.2, pages 94-96 (start at Infinite Limits).
3. THINK ABOUT:
   - 3.1 How are infinite limits and vertical asymptotes related?
4. DO:
   - 4.1 Section 2.2/ 3, 8, 9, 25, 26

Questions?

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