MA104 Lesson 54

LESSON 54 - Optimization and a Problem Solving Lab

Monday, 28 April, 2008

Outline

1. Admin
2. Last Class
3. Optimization
   - Course Guide
   - Steps for Optimization
4. Lots of Board Work
   - Examples
   - Do Problem Help
5. Look Forward - SOLVING MULTIVARIATE OPTIMIZATION PROBLEMS II

Admin

1. Mini-WPR Went OK for most people, everyone still needs a little work on partial derivatives and attention to detail.
2. Less than half of the class has filled out the survey - Cut off for bonus points is the end of this week. There are a few who have started the survey but not completed it.
3. Project is due Friday in class.

Lesson 53 - Optimization and the Mini-WPR

Questions?

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Objectives

1. Model and solve multivariate optimization problems.

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5. Use the Second Derivative Test to determine the classification of the critical points. Again Mathematica can make finding the Determinant easier. In our case we get $D > 0$ and $f_{xx} < 0$ proving we have a maximum.
6. Test the Critical Points in the function to determine the Max or Min you are seeking. In our case we get $f(2, 2) = 4$

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- We will post the solutions to this as a class!

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Examples

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DO Problems

1. Section 14.7/ 3, 5, 7, 9, 11
2. Section 14.7/ 30, 32, 33
3. Section 14.7/ 39, 43, 46
4. Section 14.7/ 48, 50, 51

LESSON 55 - SOLVING MULTIVARIATE OPTIMIZATION PROBLEMS II

1. OBJECTIVES:
   1. Model and solve multivariate optimization problems.
2. READ:
   1. Stewart: Section 14.7, pages 922-930.
3. DO:
   1. Section 14.7/ 52, 54

Questions?

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