Lecture 9. 21 September 2004

- Review of Lecture #8: Concepts related to a set of vectors: vector spaces; range space; null space; Riesz representation; hyperplane. Inequality constrained problem: Karush-Kuhn-Tucker necessary conditions.

- KKT necessary conditions; switching conditions – solution cases. Example problems; graphical representation.

- How to systematically write all the KKT cases?

- Use of Excel and MATLAB to solve the necessary conditions.

- Physical significance of Lagrange multipliers: LMs are related to variations in the constraint functions, such as the constraint limit and other parameters in the constraint. This interpretation also shows why the LM are nonnegative for “less than equal” to type constraints.

- Read: Sections 4.4, 4.5.

- HW #6: submit hard copy and electronically by 9-28-04

  - 4.54 Chung
  - 4.55 Danielson
  - 4.56 Han
  - 4.57 Lee, I-J
  - 4.58 Lee, S-Y
  - 4.59 Narayan
  - 4.60 Noh
  - 4.72 Williams
  - 4.73 Xiang
  - 4.74 Yang