

Indian Institute of Science

Linear and non-linear programming-1

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Midterm exam, Spring 2018

Late submission policy: Points scored = Correct points scored $\times e^{-d}$, $d = \#$ days late

Assigned date: March. 30th 2018

Due date: April. 13th 2018 in class

Note:

- There are 10 problems and the total number of points is 100.
 - Book by David Luenberger and Yinyu Ye (DY) and book by Dimitris Bertsimas (DB)
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Solve the following problems:

- (a) Chapter 2: problem # 4 in DY.
- (b) Chapter 1: problem # 1.4 in DB.
- (c) Chapter 3: problem # 2 and 12 in DY.
- (d) Chapter 4: problem # 3 and 16 in DY.
- (e) Chapter 4: problem # 4.44 in DB.
- (f) Chapter 5: problem # 1¹ and 5 in DY.
- (g) Develop a software code for the ellipsoid method. Pick up a simple LP problem involving 3 variables of your choice and show the solution steps. Sketch the trajectory to the optimal solution.

¹Please refer to Klee-Minty example (page number 135 of DY)