IE 601, Optimization Techniques
Assignment 05, October 14, 2019
Due Monday, October 21

Note: There are 5 questions on 1 page(s). Submit a report written in your own words. Write your name and roll number clearly on the report.

1. For an LP in standard form $\min c^\mathsf{T} x$ subject to $Ax = b, x \geq 0$, suppose the optimal dual solution value corresponding to the i-th constraint is $\hat{w}_i$. If we change b_i to $b_i + \delta$ for some $\delta > 0$ what is the approximate change in the optimal objective value? Is this change an underestimate or an overestimate of the actual change? How will the above two answers change if the problem was $\max c^\mathsf{T} x$ subject to $Ax = b, x \geq 0$?

2. Exercise 6.53 [BJS, 2nd Ed.]

3. Exercise 6.65 [BJS, 2nd Ed.]

4. Exercise 6.71 [BJS, 2nd Ed.]

5. Exercise 6.72 [BJS, 2nd Ed.]