IEDA 5230 (Fall 2023)

Assignment 1

Due date: Sept 27, 2023

This assignment refers to Lecture Notes 3

1. Slide 7. Sensitivity analysis of Product 2 gives “Allowable Increase = 16.82” and “Allowable Decrease = 1.16.”
   1. Show how the above two values are calculated.
   2. Explain how the optimal solution may (or may not) change when the parameter 25.00 changes within/beyond the range.
2. Slide 11. Sensitivity analysis of M2 gives “Allowable Increase = 30.36” and “Allowable Decrease = 15.31.”
   1. Show how the above two values are calculated.
   2. Explain how the optimal solution may (or may not) change when the parameter 200.00 changes within/beyond the range.
3. Slide 10. Consider the LP in standard from.
   1. Write the dual of the LP.
   2. Use this pair of primal/dual to demonstrate the proof of strong duality in slide 27.