

**Reading Assignment: Textbook Chapter 4****Homework**

- (1) [10 points] Textbook Chapter 4, Exercise 4.1
- (2) [20 points] Textbook Chapter 4, Exercise 4.2
- (3) [20 points] Textbook Chapter 4, Exercise 4.3
- (4) [10 points] Textbook Chapter 4, Exercise 4.4
- (5) [15 points] Textbook Chapter 4, Exercise 4.5 (a), (b), (c).
- (6) [10 points] Textbook Chapter 4, Exercise 4.6
- (7) [15 points]

Recall what we did in the classroom and consider the following linear programming problem:

$$\begin{array}{llllll} \text{Min} & -40x_1 & - & 30x_2 & & \\ \text{s. t.} & & & & & \\ & x_1 & + & x_2 & \leq & 40 \\ & 2x_1 & + & x_2 & \leq & 60 \\ & x_1 & , & x_2 & \geq & 0 \end{array}$$

Find its dual linear programming problem. Graph the feasible domains of the primal and dual problems. Construct the primal basic solution and dual basic solution corresponding to each basis. Point out which ones are primal basic feasible and which ones are dual feasible. Remember to highlight on your graph the connections between primal and dual basic solutions.