HW # 2

① Sketch and find all basic feasible solutions (BFS)

$$\max \quad 120 x_1 + 100 x_2$$

$$x_1 + x_2 \le 4$$

$$5 x_1 + 3 x_2 \le 15$$

$$x_1, x_2 \ge 0$$

② Find the optimal solutions in ①, ③ and ④

③ Sketch and find all BFS

$$\min \quad -4 x_1 + 7 x_2$$

$$s.t \quad x_1 + x_2 \ge 3$$

$$-x_1 + x_2 \le 3$$

$$2 x_1 + x_2 \le 8$$

$$x_1, x_2 \ge 0.$$

④ Same as ③

$$\min \quad 2 x_1 + 2 x_2$$

$$s.t \quad x_1 + 2 x_2 \le 4$$

$$x_1 + x_2 \le 3$$

$$x_1 - x_2 \ge 1 \qquad x_1, x_2 \ge 0.$$