

Homework #2

- 1 Sketch the set of feasible solutions to the following set of inequalities, draw the objective function $z = c^t x = k$ for the indicated value of k , and conjecture the optimal value of z :

$$\text{Maximize } z = 2x + 3y$$

subject to

$$x + y \leq 4,$$

$$3x + y \leq 6,$$

$$x + 3y \leq 6,$$

$$x \geq 0, y \geq 0$$

$$k = 4, 6, 8, 10$$

- 2 Find the extreme points of the feasible set and find the optimal solutions:

$$\text{Maximize } z = 2x + 3y$$

subject to

$$3x + y \leq 6,$$

$$x + y \leq 4,$$

$$x + 2y \leq 6,$$

$$x \geq 0, y \geq 0$$