

(1)

Sept. 25/17

Linear Prog

$$\min z = 2x_1 - 3x_2 \quad \swarrow$$

$$\max(-z) = -2x_1 + 3x_2 \quad \searrow$$

$$-z + 2x_1 - 3x_2 = 0$$

$$x_1 + x_2 + s_1 = 4$$

$$x_1 - x_2 + s_2 = 6$$

$$x^* = \begin{bmatrix} 0 \\ 4 \end{bmatrix} \quad z^* = -12$$

$$x_1 = 0$$

$$x_2 = 4$$

$$-z = 12$$

Midterm :

- Graphing Solution ✓
- Unique Solution, unbounded, infinity ✓
- Simplex Method
- Relationship between LP → extreme points
↳ basic concepts

$$\min z = 2x_1 - 3x_2 \rightarrow z = 2(0) - 3(4)$$

$$x^* \begin{bmatrix} 0 \\ 4 \end{bmatrix} \rightarrow$$

$$= -12$$

$$z^* = -12$$

$$\max z = 60x_1 + 30x_2 + 20x_3 \rightarrow z = 60(2) + 30(0) + 20(8)$$

$$x^* \begin{bmatrix} 2 \\ 0 \\ 8 \end{bmatrix}$$

$$= 280$$

$$z^* = 280$$