

CS603 Mathematical Concepts in Computer Science

Problem Set-Linear Programming

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1. Maximize $z = 3x_1 + 7x_2$ subject to

$$x_1 + 4x_2 \leq 20$$

$$2x_1 + x_2 \leq 30$$

$$x_1 + x_2 \leq 8$$

2. Maximize $z = 4x_1 + 4x_2$ subject to

$$2x_1 + 7x_2 \leq 21$$

$$7x_1 + 2x_2 \leq 49$$

$$x_1 \geq 0$$

$$x_2 \geq 0$$

3. Maximize $z = 3x_e + 2x_1$ subject to

$$x_e + 2x_1 \leq 6$$

$$2x_e + x_1 \leq 8$$

$$-x_e + x_1 \leq 1$$

$$x_1 \leq 2$$

$$x_e, x_1 \geq 0$$