

Test Data for Program Assignment 2

(1)

Input:

$$\text{maximize } 10x_1 + 10x_2 + 12x_3 + 18x_4$$

$$\text{s.t. } 2x_1 + 4x_2 + 6x_3 + 9x_4 \leq 15$$

$$x_1, x_2, x_3, x_4 \in \{0, 1\}$$

Output:

38

$$x_1 = 1, x_2 = 1, x_3 = 0, x_4 = 1 \quad (\text{for reference only})$$

$$\text{ratio} = 1 - 11/31 = 0.645161 \quad (\text{for reference only})$$

(2)

Input:

$$\text{maximize } 7x_1 + 10x_2 + 12x_3 + 18x_4 + 12x_5 + 18x_6$$

$$\text{s.t. } 2x_1 + 4x_2 + 6x_3 + 9x_4 + 4x_5 + 7x_6 \leq 18$$

$$x_1, x_2, x_3, x_4, x_5, x_6 \in \{0, 1\}$$

Output:

47

$$x_1 = 1, x_2 = 1, x_3 = 0, x_4 = 0, x_5 = 1, x_6 = 1 \quad (\text{for reference only})$$

$$\text{ratio} = 0.897638 \quad (\text{for reference only})$$