

تمارين -2-

أوجد الحل الأمثل (إن وجد) بيانيا لكل من النماذج الخطية التالية

1-  $\text{Max } Z = 50X_1 + 18X_2$

Subject to

$$2X_1 + X_2 \leq 100$$

$$X_1 + X_2 \leq 80$$

$$X_1 \geq 0, X_2 \geq 0$$

2-  $\text{Max } Z = 10X_1 + 8X_2$

Subject to

$$2X_1 + X_2 \leq 40$$

$$2X_1 + 3X_2 \leq 80$$

$$X_1 \geq 0, X_2 \geq 0$$

3-  $\text{Max } Z = 3X_1 + 4X_2$

Subject to

$$5X_1 + 4X_2 \leq 200$$

$$3X_1 + 5X_2 \leq 150$$

$$5X_1 + 4X_2 \geq 100$$

$$8X_1 + 4X_2 \geq 80$$

$$X_1 \geq 0, X_2 \geq 0$$

$$4- \text{Min } Z = 120X_1 + 100X_2$$

Subject to

$$10X_1 + 5X_2 \leq 80$$

$$6X_1 + 6X_2 \leq 66$$

$$4X_1 + 8X_2 \geq 24$$

$$5X_1 + 6X_2 \leq 90$$

$$X_1 \geq 0, X_2 \geq 0$$

$$5- \text{Min } Z = 20X_1 + 40X_2$$

Subject to

$$36X_1 + 6X_2 \geq 108$$

$$3X_1 + 12X_2 \geq 36$$

$$200X_1 + 100X_2 \geq 1000$$

$$X_1 \geq 0, X_2 \geq 0$$