

**Ex:**

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

**S.T.**

$$8X_1 + 4X_2 \leq 32$$

$$6X_1 + 8X_2 \leq 48$$

$$4X_1 + 6X_2 \leq 24$$

$$X_1, X_2 \geq 0$$

**Sol:**

$$8X_1 + 4X_2 = 32$$

$$\text{At } x_1=0 \quad X_2=8. \quad (0,8)$$

$$\text{At } x_2=0 \quad X_1=4 \quad (4,0)$$

$$6X_1 + 8X_2 = 48$$

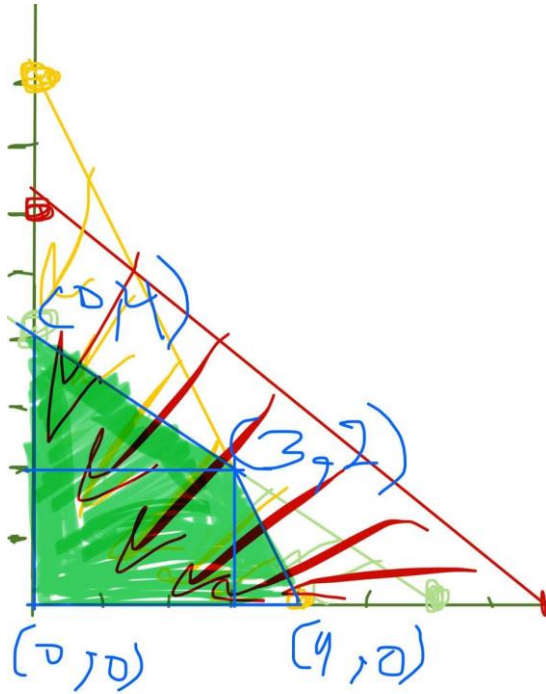
$$\text{At } x_1=0 \quad X_2=6. \quad (0,6)$$

$$\text{At } x_2=0 \quad X_1=8. \quad (8,0)$$

$$4X_1 + 6X_2 = 24$$

$$\text{At } x_1=0 \quad X_2=4. \quad (0,4)$$

$$\text{At } x_2=0 \quad X_1=6. \quad (6,0)$$



$(0,0) ; (4,0) ; (3,2) ; (0,4)$

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

- $(0,0)$      $\text{Max } Z = 0$
- $(4,0)$ .     $\text{Max } z = 10 \cdot 4 + 0 = 40$
- $(3,2)$ .     $\text{Max } Z = 10 \cdot 3 + 2 \cdot 2 = 34$
- $(0,4)$ .     $\text{Max } Z = 0 + 2 \cdot 4 = 8$

$\text{Max } Z = 40$  at  $x_1 = 4$  ,  $x_2 = 0$