

$$\text{Max } Z = 115x_1 + 90x_2$$

s.t.

$$10x_1 + 20x_2 \leq 200$$

$$4x_1 + 16x_2 \leq 128$$

$$15x_1 + 10x_2 \leq 220$$

$$x_1, x_2 \geq 0$$

x_1	x_2
10	20
32	8
14.6	22

① Constraint values

$$10x_1 + 20x_2 \leq 200$$

$$15x_1 + 10x_2 \leq 220$$

non negative

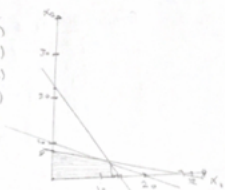
$$4x_1 + 16x_2 \leq 128$$

$$(0, 5)$$

$$(8, 5)$$

$$(14.6, 0)$$

$$(12, 4)$$



$$\text{② min } W = 200y_1 + 128y_2 + 220y_3$$

$$\leq \begin{bmatrix} 10 & 20 \\ 4 & 16 \\ 15 & 10 \end{bmatrix} \Rightarrow \begin{bmatrix} 10 & 15 \\ 20 & 16 & 10 \end{bmatrix}$$

$$10y_1 + 4y_2 + 15y_3 \geq 115$$

$$20y_1 + 16y_2 + 10y_3 \geq 90$$

$$\text{max } Z = 115x_1 + 90x_2$$

$$x_2 = \frac{-115}{a_{10}}$$

s.t.

$$10x_1 + 20x_2 \leq 200$$

$$15x_1 + 10x_2 \leq 220$$

$$\left[-\frac{10}{20} \leq \frac{-c}{a_{10}} \leq \frac{-15}{10} \right]$$

$$[45 \geq c \geq 135]$$