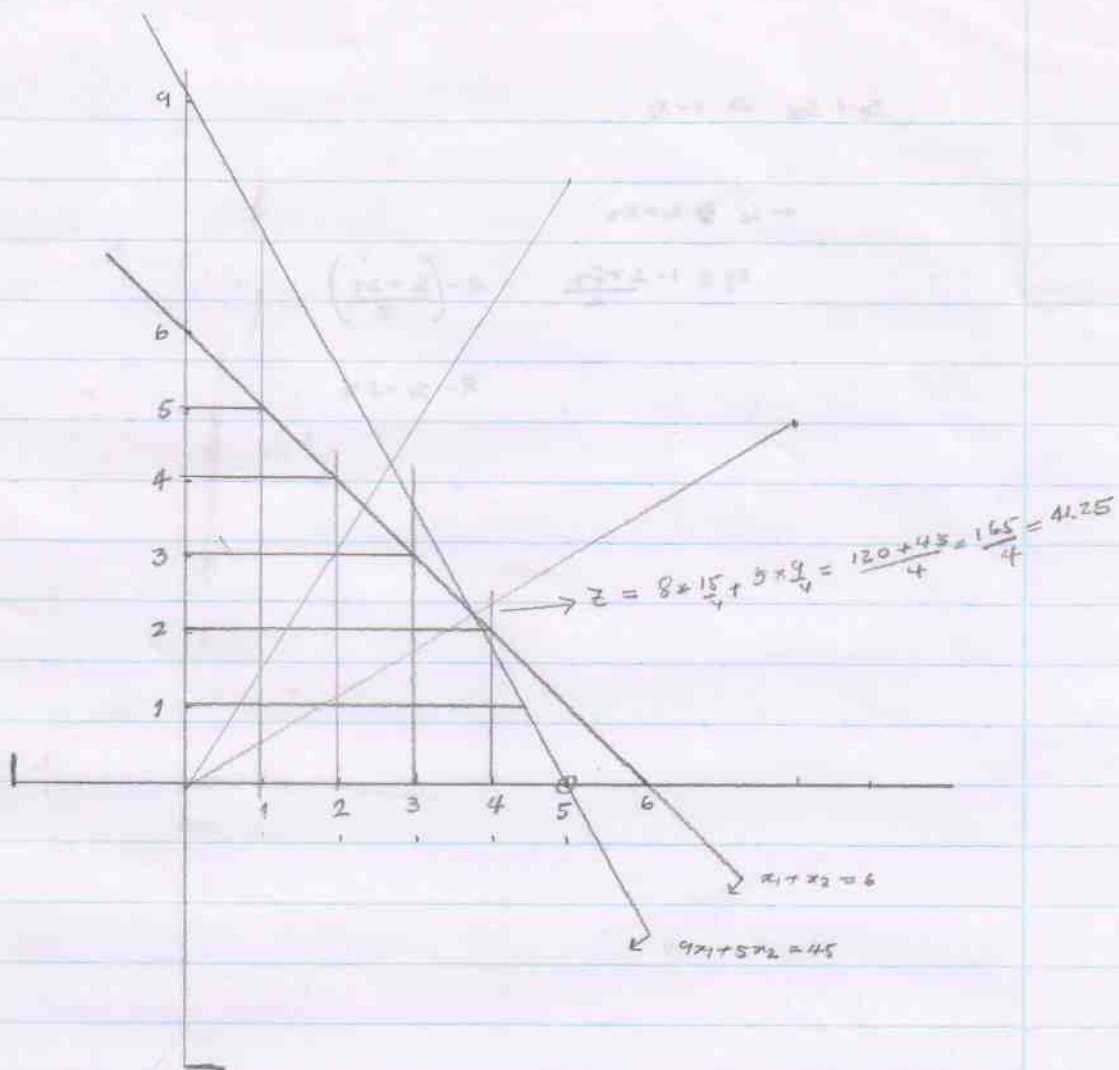


1B



$$x_1 + x_2 = 6 \Rightarrow -5x_1 - 5x_2 = -30$$

$$9x_1 + 5x_2 = 45$$

$$4x_1 = 15 \Rightarrow x_1 = \frac{15}{4} \Rightarrow x_2 = 6 - \frac{15}{4} = \frac{9}{4} = 2.25$$

$$= 3.75$$

Max $Z = 8x_1 + 5x_2$
 s.o.v

$$x_1 + x_2 \leq 6$$

$$9x_1 + 5x_2 \leq 45$$

$$x_1, x_2 \geq 0 \text{ e inteiros}$$

$$x^* = (x_1, x_2)^t = \left(\frac{15}{4}, \frac{9}{4}\right)^t = (3.75, 2.25)^t$$

$$Z^* = 41.25$$

23

$$\begin{aligned} \text{Max } Z = & 1500000x_1 + 250000x_2 + 350000x_3 + 450000x_4 \\ & + 500000x_5 + 550000x_6 - 600000x_1 - 170000x_2 - 250000x_3 \\ & - 300000x_4 - 220000x_5 - 110000x_6 \end{aligned}$$

$$\begin{aligned} Z = & 900000x_1 + 80000x_2 + 100000x_3 + 150000x_4 \\ & + 280000x_5 + 440000x_6 \end{aligned}$$

superior a

$$600000x_1 + 170000x_2 + 250000x_3 + 300000x_4 + 220000x_5$$

$$+ 110000x_6 \leq 1950000$$

$$800x_1 + 270x_2 + 220x_3 + 210x_4 + 320x_5 + 415x_6 \leq 1600$$

$$210x_1 + 115x_2 + 140x_3 + 110x_4 + 125x_5 + 1200x_6 \leq 1400$$

$$x_j \in \{0, 1\} \quad \begin{cases} 1, & \text{se toma la } j \text{ fruscula} \\ 0, & \text{no} \end{cases}$$

MATERIA

DATE

ZB

$x_1 \rightarrow$ TV

$x_2 \rightarrow$ RE

$x_3 \rightarrow$ Jurnal

$x_4 \rightarrow$ Radio

$x_5 \rightarrow$ RD

$x_6 \rightarrow$ Folder

(i) $x_3 + x_4 \geq x_5$

(ii) $x_1 + x_4 \leq 1$

(iii) $x_1 + x_2 + x_3 + x_4 + x_5 + x_6 \leq 3$

(iv) $x_3 \leq 1 - \left(\frac{x_2 + x_6}{2} \right)$

$2x_3 \leq 2 - x_2 - x_6$

$x_2 + 2x_3 + x_6 \leq 2$

MATERIA

DATA

3B. Max $Z = 6x_1 + 4x_2 + 5x_3 + 6x_4 + 9x_5$
 s.t $8x_1 + 4x_2 + 5x_3 + 3x_4 + 10x_5 \leq 11$
 $x_j \in \{0,1\}$

	c_j	a_j	c_j/a_j	
1	6	8	$3/4 = 0.75$	5
2	4	4	1	2
3	5	5	1	3
4	6	3	2	1
5	9	10	$9/4 = 0.9$	4

$x_4 = 1$

$b^1 = 11 - 3 = 8$

$x_2 = 1$

$b^2 = 8 - 4 = 4$

$x_3 = 1$

$b^3 = 4 - 5 = -1 \Rightarrow x_3 = 4/5 = 0.8$

$x_3 = 1$

$b^2 = 8 - 5 = 3$

$x_2 = 3/4 = 0.75$

$x^* = (x_1, x_2, x_3, x_4, x_5) = (0, 1, 0.8, 1, 0)$

$= (0, 0.75, 1, 1, 0)$

$Z^* = 4 + 9 \cdot \frac{4}{5} + 6 = 14$