Ejercicio 3.4

Min $Z = 5x_1 + 9x_2$

$$10x_1 + 15x_2 \geq 25$$
$$8x_1 - 11x_2 \geq 40$$
$$x_1, x_2 \geq 0$$

MAX $Z = 25y_1 + 40y_2$

$$10y_1 + 8y_2 \leq 5$$
$$15y_1 - 11y_2 \leq 9$$
$$y_1, y_2 \geq 0$$

$$Z = 25y_1 + 40y_2 + 0s_1 + 0s_2$$
$$10y_1 + 8y_2 + s_1 = 5$$
$$15y_1 - 11y_2 + 0 + s_2 = 9$$
$$y_1, y_2, s_1, s_2 \geq 0$$

	VB	Z	y_1	y_2	s_1	s_2	CR
F1	s_1	0	10	8	1	0	5
F2	s_2	0	15	-11	0	1	9
F3	Z	1	-25	-40	0	0	0

$F_1 \div 8, \quad F_2 + 11 \cdot F_1, \quad F_3 + 40 \cdot F_1$

VB	Z	y_1	y_2	s_1	s_2	CR
y_2	0	5/4	1	1/8	0	5/8
s_2	0	115/4	0	11/8	1	127/8
Z	1	25	0	5	0	25

$$y_1 = 0$$
$$y_2 = 5/8$$
$$z = 25$$

$$10x_1 + 15x_2 \geq 25$$

$$10x_1 + 15x_2 = 25$$
$$10x_1 + 15x_2 - 25 = 0$$
$$(10x_1 + 15x_2 - 25)(y_1) = 0$$
$$(10x_1 + 15x_2 - 25)(0) = 0$$
$$x_2 = 0$$

$$8x_1 - 11x_2 \geq 40$$

$$8x_1 - 11x_2 = 40$$
$$8x_1 - 11x_2 - 40 = 0$$
$$(8x_1 - 11x_2 - 40)(y_2) = 0$$
$$(8x_1 - 11x_2 - 40)(5/8) = 0$$
$$x_1 = 5$$

$$\text{Min } z = 5x_1 + 9x_2$$
$$\text{Donde } x_1 = 5$$
$$\text{Donde } x_2 = 0$$
$$z = 5(5) + 9(0)$$
$$z = 25$$

R// Se necesita sea x_1 sea 5 y x_2 sea 0 para minimizar el valor de $z = 25$