

Solve the following LP problem:

$$\begin{cases} x_1 + x_3 \leq 40 \\ -x_2 + x_3 \leq 10 \\ x_1 + x_2 - x_3 \leq 18 \\ (x_1, x_2, x_3 \geq 0) \end{cases}$$

$$-4x_1 - 3x_3 \rightarrow \min.$$

Solution:

	x_1	x_2	x_3		ratio
x_4	1	0	1	40	40/1
x_5	0	-1	1	10	
x_6	1*	1	-1	18	<u>18/1</u>
	-4	0	-3	0	

	x_6	x_2	x_3		ratio
x_4	-1	-1	2	22	22/2
x_5	0	-1	1*	10	<u>10/1</u>
x_1	1	1	-1	18	
	4	4	-7	72	

	x_6	x_2	x_5	
x_4	-1	1*	-2	2
x_3	0	-1	1	10
x_1	1	0	1	28
	4	-3	7	142

	x_6	x_4	x_5	
x_2	-1	1	-2	2
x_3	-1	1	-1	12
x_1	1	0	1	28
	1	3	1	148.

The minimum of the objective function

is -148, attained at $x_1 = 28, x_2 = 2, x_3 = 12$.