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Kelas : C

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Program linier dengan metode simplek

Maksimumkan $Z = 2x_1 + x_2$

Batas :
• $x_2 = 10 \rightarrow x_2 + x_3 = 10$
• $2x_1 + 5x_2 = 60 \rightarrow 2x_1 + 5x_2 + x_4 = 60$
• $x_1 + x_2 \leq 10 \rightarrow x_1 + x_2 + x_5 = 10$
• $3x_1 + x_2 \leq 44 \rightarrow 3x_1 + x_2 + x_6 = 44$

F. Tujuan : $Z = 2x_1 + x_2 \rightarrow Z - 2x_1 - x_2 + Mx_3 + Mx_4 = 0$

$$[-2 \quad -1 \quad M \quad M \quad 0 \quad 0 \quad 0]$$

$$M [0 \quad 1 \quad 1 \quad 0 \quad 0 \quad 0 \quad 10]$$

$$M [2 \quad 5 \quad 0 \quad 1 \quad 0 \quad 0 \quad 60]$$

$$(-2M-2) \quad (-6M-1) \quad 0 \quad 0 \quad 0 \quad 0 \quad -70M$$

Iterasi I

Var. dasar	Z	x_1	x_2	x_3	x_4	x_5	x_6	Nil	index
Z	1	$-2M-2$	$-6M-1$	0	0	0	0	$-70M$	
x_3	0	0	1	1	0	0	0	10	10
x_4	0	2	5	0	1	0	0	60	12
x_5	0	1	1	0	0	1	0	10	10
x_6	0	3	1	0	0	0	1	44	44

Iterasi II

Var. dasar	Z	x_1	x_2	x_3	x_4	x_5	x_6	Mk	index
Z	1	$-2M-2$	0	$6M+1$	0	0	0	$-10M+10$	
x_2	0	0	1	1	0	0	0	10	00
x_4	0	2	0	-5	1	0	0	10	5
x_5	0	1	0	-1	0	1	0	9	9
x_6	0	3	0	-1	0	0	1	321	$29/3$

Iterasi III

Var. dasar	Z	x_1	x_2	x_3	x_4	x_5	x_6	Mk	index
Z	1	0	0	$M-4$	$M+1$	0	0	20	
x_2	0	0	1	1	0	0	0	10	
x_1	0	1	0	$-5/2$	$1/2$	0	0	5	
x_5	0	0	0	$3/2$	$-1/2$	1	0	3	
x_6	0	0	0	$13/2$	$-3/2$	0	1	29	

Diperoleh : $x_1 = 5$, $x_2 = 10$, $Z = 20$