КР 2

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К-28

Варіант 3

№1

$$L = 6x_1 + 4x_2 \to \min$$

$$\begin{cases} 2x_1 + x_2 \geq 3 \\ x_1 - x_2 \leq 1 \\ -x_1 + 2x_2 \geq 1 \\ x_1, x_2 \geq 0 \end{cases}$$

$$\begin{cases} -2x_1 - x_2 \leq -3 \\ x_1 - x_2 \leq 1 \\ x_1 - 2x_2 \leq -1 \\ x_1, x_2 \geq 0 \end{cases}$$

$$L = 6x_1 + 4x_2 \to \min$$

$$\begin{cases} -2x_1 - x_2 + x_3 = -3 \\ x_1 - x_2 + x_4 = 1 \\ x_1 - 2x_2 + x_5 = -1 \\ x_1, x_2 \geq 0 \end{cases}$$

			6	4	0	0	0	
Сб	Хб	A_0	A_1	A_2	A_3	A_4	A_5	
0	$\leftarrow x_3$	−3	(−2)	−1	1	0	0	
0	x_4	1	1	−1	0	1	0	
0	x_5	−1	1	−2	0	0	1	
Δ			6	4	0	0	0	≥0
γ			$3^{\uparrow}$	4	—	—	—	

			6	4	0	0	0	
Сб	Хб	A_0	A_1	A_2	A_3	A_4	A_5	
6	x_1	$\frac{3}{2}$	1	$\frac{1}{2}$	$-\frac{1}{2}$	0	0	
0	x_4	$-\frac{1}{2}$	0	$-\frac{3}{2}$	$\frac{1}{2}$	1	0	
0	$\leftarrow x_5$	$-\frac{5}{2}$	0	$(-\frac{5}{2})$	$\frac{1}{2}$	0	1	
Δ			0	1	3	0	0	
γ			—	$\frac{2}{5}^{\uparrow}$	—	—	—	

СТ.2

Сб	хб	A_0	A_1 (6)	A_2 (4)	A_3 (0)	A_4 (0)	A_5 (0)
6	x_1	1	1	0	$-\frac{2}{5}$	0	$\frac{1}{5}$
0	x_4	1	0	0	$\frac{1}{5}$	1	$-\frac{3}{5}$
4	x_2	1	0	1	$-\frac{1}{5}$	0	$-\frac{2}{5}$
		≥ 0 – опт. реш.					

$\tilde{x}^* = (1, 1, 0, 1, 0)$

$x^* = (1, 1)$

$L(x^*) = 6 + 4 = 10$

№2

$$C = \begin{pmatrix} 17 & 20 & 29 & 26 & 25 \\ 3 & 4 & 5 & 15 & 24 \\ 19 & 2 & 22 & 4 & 13 \\ 220 & 27 & 1 & 17 & 19 \end{pmatrix}$$

$a = (15, 15, 15, 15)$

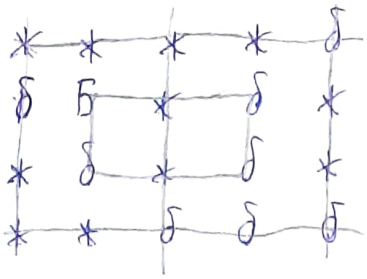
$b = (11, 11, 11, 11, 16)$

$\sum a_i = \sum b_j$

	Q_1	Q_2	Q_3	Q_4	Q_5	a	a−x	u
P_1	6 — 17	−1 — 20	22 — 29	3 — 26	0 15 25	15	0	−6
P_2	0 3 11	−9 4 −0	6 — 5	0 15 4	7 — 24	15	4, 0	2
P_3	27 — 19	0 11	2 34 — 22	0 4	7 — 13	15	4, 0	13
P_4	215 — 220	12 — 27	0 11 1	0 3 17	0 1 19	15	4, 1, 0	0
b	11	11	11	11	16			
b−x	0	0	0	7, 3, 0	15, 0			
v	5	15	1	17	19			

$\min \Delta_{ij} = \Delta_{22}$

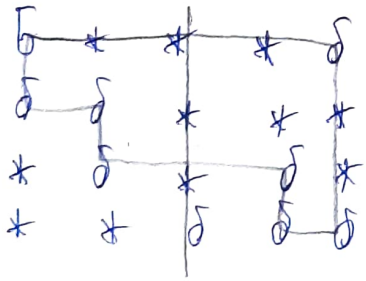
СТ. 3



$Q = 4 = X_{24}$

	Q_1	Q_2	Q_3	Q_4	Q_5	a	u
P_1	-3 0 17	-1 20	22 29	3 26	0 15 25	15	−6
P_2	0 11 19	0 4 4	15 5	9 15	16 24	15	11
P_3	18 19	0 7 2	34 22	0 4	7 13	15	13
P_4	206 220	12 27	0 11	1 0 3	17 0 19	15	0
b	11	11	11	11	16		
V	14	15	1	17	19		

$\min \Delta_{ij} = \Delta_{11}$



$Q = 3 = X_{44}$

	Q_1	Q_2	Q_3	Q_4	Q_5	a	u
P_1	0 3 17	2 20	22 29	6 26	0 12 25	15	−6
P_2	0 8 3	0 7 4	12 5	9 15	13 24	15	8
P_3	18 19	0 4 2	31 22	0 11 4	4 13	15	10
P_4	209 220	15 27	0 11 1	3 17	0 4 19	15	0
b	11	11	11	11	16		
V	11	12	1	14	19		

Всі $\Delta_{ij} \geq 0$

x – опт.

CT. 4

$$X = \begin{pmatrix} 3 & 0 & 0 & 0 & 12 \\ 8 & 7 & 0 & 0 & 0 \\ 0 & 4 & 0 & 11 & 0 \\ 0 & 0 & 11 & 0 & 4 \end{pmatrix}$$

$$L(x) = 51 + 300 + 24 + 28 + 8 + 44 + 11 + 76 = 542$$