

MATEMATIČKE METODE U PROMETU

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1. Grafičkom metodom riješite linearni problem

$$\min(2x + y)$$

$$x + y \geq 0$$

$$y - x \leq 4$$

$$y \leq 4$$

$$4y - x \geq 0$$

$$3x + 2y \leq 14$$

2. Linearni problem riješite numerički:

$$\max(2x_1 + x_2 + x_3)$$

$$6x_1 + 3x_2 + 4x_3 \leq 24$$

$$3x_1 + 2x_2 - x_3 \geq 12$$

$$2x_1 - x_2 - x_3 = -4$$

$$x_1, x_2, x_3 \geq 0$$

3. Riješite transportni problem i izračunajte minimalni trošak:

	O ₁	O ₂	O ₃	a _i
I ₁	2	1	0	45
I ₂	2	2	3	60
I ₃	1	2	3	75
b _j	50	65	40	

4. Transportna je mreža zadana matricom. Nacrtajte mrežu, odredite najkraći put, maksimalni tok i rez minimalnog kapaciteta.

$$T = \begin{bmatrix} 0 & 80 & 70 & 0 & 90 & 0 & 0 & 0 & 0 \\ 0 & 0 & 30 & 60 & 70 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 50 & 40 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 80 & 0 & 20 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 30 & 60 & 10 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 90 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 40 & 100 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 120 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$