

Matematičke metode u prometu, 1.2.2010.

1. Riješite grafičkom metodom linearni problem:

$$\begin{aligned} \max(x_1 + x_2) \\ x_1 + 2x_2 &\leq 7 \\ 3x_1 + 2x_2 &\leq 9 \\ 6x_1 + 2x_2 &\leq 15 \\ x_1, x_2 &\geq 0 \end{aligned}$$

2. Numerički riješite linearni problem

$$\begin{aligned} \max(x_1 + x_2 + 3x_3) \\ x_1 + 2x_2 + x_3 &\geq 7 \\ 3x_1 + 2x_2 + 3x_3 &= 9 \\ 6x_1 + 2x_2 + 9x_3 &\leq 15 \\ x_1, x_2, x_3 &\geq 0 \end{aligned}$$

3. Riješite transportni problem zadan tablicom

	$O_1$	$O_2$	$O_3$	$O_4$	$a_i$
$I_1$	1	2	3	5	60
$I_2$	2	6	5	9	90
$I_3$	3	4	4	5	120
$b_j$	50	50	70	100	

4. U transportnoj mreži odredite najkraći put i maksimalni tok

$$T = \begin{bmatrix} 0 & 60 & 90 & 120 & 0 & 0 & 0 \\ 0 & 0 & 50 & 0 & 30 & 0 & 0 \\ 0 & 0 & 0 & 0 & 60 & 40 & 0 \\ 0 & 0 & 60 & 0 & 0 & 20 & 0 \\ 0 & 0 & 0 & 0 & 0 & 90 & 160 \\ 0 & 0 & 0 & 0 & 0 & 0 & 80 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$