

Chapter 7

Linear Optimization (Transportation Problem)

Exercises

7. 1.

There are three warehouses W_1, W_2 and W_3 . They have 250, 130 and 235 tons of paper accordingly. There are four publishers P_1, P_2, P_3 and P_4 . They ordered 75, 230, 240 and 70 tons of paper to publish new books.

There are the following costs in dollars of transportation of one ton of paper:

From \ To	P_1	P_2	P_3	P_4
W_1	15	20	16	21
W_2	25	13	5	11
W_3	15	15	7	17

7. 2.

The following table shows the supply and demand of a certain good from the producers P_1, P_2 and P_3 to the consumers C_1, C_2 and C_3 as well as the unit transportation costs for each route:

From \ To	C_1	C_2	C_3	Supply
P_1	32	60	200	20
P_2	40	68	80	30
P_3	120	104	60	45
Demand	30	35	30	95

1. Find a transportation plan with minimum transportation costs.
2. The route $P_3 \rightarrow C_3$ is going to be closed due to some necessary construction works. How should the previous optimal solution be adapted to the new situation?

(Last updated: 10.09.2015)