Exercises, lecture 1

maandag 6 september 2021 13:49

1.1

(a) Define x_{ij} = amount of product delivered from supplier i to customer j, $i = 1,..,4$, $j = 1,..,3$

(b)
$$\min z = 3x_{11} + 2.5x_{12} + 4x_{21} + 3x_{23} + 3x_{32} + 6x_{33} + 2.5x_{41} + 3x_{42}$$

s.t
$$\begin{aligned}
x_{11} + x_{12} &\leq 1200\\
x_{21} + x_{23} &\leq 500\\
x_{32} + x_{33} &\leq 600\\
x_{41} + x_{42} &\leq 1500\\
x_{11} + x_{21} + x_{41} &\geq 1800\\
x_{12} + x_{32} + x_{42} &\geq 700\\
x_{23} + x_{33} &\geq 300
\end{aligned}$$

$$x_{11}, x_{12}, x_{21}, x_{23}, x_{32}, x_{33}, x_{41}, x_{42} \geq 0$$

(c) The optimal objective value is $z^* = 10300$.
The optimal solution is