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Tutorials

Optimisation

2018

Exercise Sheet 1

Exercise 1:
Reformulate the following LP as an LP in standard form.

$$
\begin{array}{rrcrcrcrcl}
\max & -2x_1 & + & x_2 & - & 4x_3 & & & \\
\text{subject to} & x_1 & + & x_2 & & & + & x_4 & \leq 2 \\
& & & 3x_2 & - & x_3 & & & = 5 \\
& & & & & x_3 & + & x_4 & \geq 3 \\
& x_1 & & & & & & & \geq 0 \\
& & & & & x_3 & & & \leq 0
\end{array}
$$

Exercise 2:
Formulate the following optimisation problem as an LP.

$$
\begin{array}{rl}
\min & 2x_1 + 3|x_2 - 10| \\
\text{subject to} & |x_1 + 2| + |x_2| \leq 5
\end{array}
$$