

Tutorials
Optimisation
2018
Exercise Sheet 4

Exercise 7:

Consider the problem

$$\begin{array}{ll} \min & -2x_1 - x_2 \\ \text{s.t.} & x_1 - x_2 \leq 2 \\ & x_1 + x_2 \leq 6 \\ & x_1, x_2 \geq 0 \end{array}$$

- (a) Convert the problem into standard form and construct a basic feasible solution at which $(x_1, x_2) = (0, 0)$.
- (b) Carry out the full tableau implementation of the simplex method, starting with the basic feasible solution of part (a). Use Bland's rule to determine the pivot element.
- (c) Draw a graphical representation of the problem in terms of the original variables x_1, x_2 and indicate the path taken by the simplex algorithm.