

Optimizing Methods

Sixth List of Problems

1. For LP_*

$$f(x_1, x_2, x_3) = 3x_1 + x_2 + 2x_3 \rightarrow \max$$

subject to:

$$\begin{aligned}x_1 + 2x_2 + x_3 &\leq 4 \\2x_1 + x_2 + x_3 &\leq 3 \\x_1 - x_2 + 4x_3 &\leq 2\end{aligned}$$

with $x_j \geq 0$, for $j = 1, 2, 3$:

- (a) define *base variables*;
 - (b) define LP_{**} by using *non-base* and *base variables*;
 - (c) define *initialization variable* \bar{x}_0 ;
 - (d) compute *entering variable* and *outgoing variable*;
 - (e) compute variable \bar{x}_1 ;
 - (f) indicate the current form of LP_{**} .
2. In the task 1 performed the first iteration of the *simplex algorithm without tableau*. Do you need a second iteration to solve the LP_* problem?