1. (10 points) Use the revised simplex method to find an optimal solution to the problem

Maximize \( z = -x_1 - x_2 - x_3 \)

subject to

\[
\begin{align*}
  x_1 + x_4 - 2x_6 &= 5, \\
  x_2 + 2x_4 - 3x_5 + x_6 &= 3, \\
  x_3 + 2x_4 - 3x_5 + 6x_6 &= 5, \\
  x_1, \ldots, x_6 &\geq 0.
\end{align*}
\]

2. (10 points) Use the revised simplex method to find a maximal flow in the network below. Do not write explicitly the whole matrix. Use an auxiliary shortest path problems to find a pivot column.