Problem 1

Solve the following LP using the 2-phase simplex algorithm:

$$
\begin{array}{lrrrr}
\max & x_1 & +2x_2 & +3x_3 & \\
\text{s.t.} & 2x_1 & +x_2 & +x_3 & \leq 10 \\
& 2x_1 & -x_2 & -x_3 & \geq 5 \\
& x_1 & +2x_2 & +x_3 & \geq 6 \\
& & & x_1, x_2, x_3 & \geq 0.
\end{array}
$$