b) \[ \text{max } 2x_1 + 3x_2 + 4x_3 + 3x_4 \]
\[ \text{s.t. } 3x_1 + 4x_2 + 5x_3 + 5x_4 \leq 7 \]
\[ x_1, x_2, x_3, x_4 \in \{0, 1\} \]

Inf \[ x_5 \text{ - slack variable.} \]
13.9b | max \(2x_1 + 5x_2 + 3x_3\)

subj. to \(3x_1 + 4x_2 + 3x_3 \leq 11\).

Introduc en slackvariable \(x_4\).

\[\begin{array}{cccccc}
(12, 2) & (11, 2) & (10, 2) & (9, 1) & (6, 1) & (3, 1) \\
(13, 1) & (10, 1) & (7, 1) & (4, 0) & (2, 0) & (0, 0) \\
(13, 0) & (10, 0) & (7, 0) & (4, 0) & (2, 0) & (0, 0) \\
\end{array}\]

Max. 13.

\(x_1 = 0 \quad x_2 = 2 \quad x_3 = 1 \quad x_4 = 0\)

It would have been possible to from the problem formulation notice that it is always better to use item 3 instead of item 1, and therefore \(x_1\) has to be 0. By noticing this from the beginning we would have got a smaller problem to solve.