Tutorial 12

1. Solve the following integer program using the cutting plane algorithm and compare your solution to question 1 of last week's tutorial which used the branch-and-bound algorithm.

$$\begin{aligned} \max \quad & z = f(\mathbf{x}) = 3x_1 + 4x_2 \\ \text{s.t.} \quad & 2x_1 + x_2 \leq 6 \\ & 2x_1 + 3x_2 \leq 9 \\ \text{with} \quad & x_1, x_2 \text{ nonnegative and integral.} \end{aligned}$$

2. Solve (using the cutting plane algorithm):

$$\begin{aligned} \min \quad & z = f(\mathbf{x}) = x_1 + x_2 \\ \text{s.t.} \quad & 2x_1 + 2x_2 \geq 5 \\ & 12x_1 + 5x_2 \leq 30 \\ \text{with} \quad & x_1, x_2 \text{ nonnegative and integral.} \end{aligned}$$