

# MS3530: Advanced Operations Research

## Practice Assignment 2

Q1 Solve using Decomposition Method

$$\begin{array}{lll} \text{Min} & -3x_1 - 2x_2 - 2x_3 - 4x_4 & \\ \text{ST} & x_1 + x_2 + 2x_3 + x_4 & \leq 10 \\ & x_1 + 2x_2 & \leq 8 \\ & x_2 & \leq 3 \\ & x_3 + 3x_4 & \leq 6 \\ & x_3 & \leq 4 \\ & x_1, x_2, x_3, x_4 & \geq 0 \end{array}$$

Q2 Solve using Decomposition Method

$$\begin{array}{lll} \text{Min} & -2x_1 - x_2 - x_3 + x_4 & \\ \text{ST} & x_1 + x_3 & \leq 2 \\ & x_1 + x_2 + 2x_4 & \leq 3 \\ & x_1 & \leq 2 \\ & x_1 + 2x_2 & \leq 5 \\ & -x_3 + x_4 & \leq 2 \\ & 2x_3 + x_4 & \leq 6 \\ & x_1, x_2, x_3, x_4 & \geq 0 \end{array}$$