

ITEC451
Activity 7 - Solutions

1.

$$\begin{aligned} \max z &= 3x_1 + 2x_2 \\ \text{s.t.} \quad 2x_1 + x_2 + s_1 &= 100 \\ x_1 + x_2 + s_2 &= 80 \\ x_1 + s_3 &= 40 \\ x_1, x_2, s_1, s_2 &\geq 0 \end{aligned}$$

2.

$$\begin{aligned} \min z &= 50x_1 + 100x_2 \\ \text{s.t.} \quad 7x_1 + 2x_2 - e_1 &= 28 \\ 2x_1 + 12x_2 - e_2 &= 243 \\ x_1, x_2, e_1, e_2 &\geq 0 \end{aligned}$$

3.

$$\begin{aligned} \min z &= 3x_1 + x_2 \\ \text{s.t.} \quad x_1 - e_1 &= 3 \\ x_1 + x_2 + s_1 &= 4 \\ 2x_1 - x_2 &= 3 \\ x_1, x_2, e_1, s_1 &\geq 0 \end{aligned}$$