

1. (**10 points**) Convert the following linear program into canonical form.

$$\begin{array}{ll}\max & 4x_1 + 2x_2 - 7x_3 \\ \text{s.t.} & 2x_1 - x_2 + 4x_3 \leq 18 \\ & 4x_1 + 2x_2 \geq 10 \\ & x_1 \geq 0, x_2 \leq 0, x_3 \text{ free}\end{array}$$