

Additional problems due Wednesday April 4

1. Convert the following LP problem into standard form

$$\begin{array}{rccccrcr} \text{maximise} & \zeta & = & x_1 & -3x_2 & +2x_3 & \\ \text{subject to} & -x_1 & -x_2 & +7x_3 & & & \geq 9 \\ & x_1 & +6x_2 & +x_3 & & & \leq 28 \\ & 2x_1 & +x_2 & -3x_3 & & & = 16 \\ & & & & x_1, x_2, x_3 & & \geq 0 \end{array}$$

2. Convert the diet problem from the first day of class into standard form.
For those who weren't there, this took the form:

$$\begin{array}{rccccrcr} \text{minimise} & \zeta & = & c_1x_1 & +c_2x_2 & +c_3x_3 & +c_4x_4 \\ \text{subject to} & a_{11}x_1 & +a_{12}x_2 & +a_{13}x_3 & +a_{14}x_4 & & \geq b_1 \\ & a_{21}x_1 & +a_{22}x_2 & +a_{23}x_3 & +a_{24}x_4 & & \geq b_2 \\ & a_{31}x_1 & +a_{32}x_2 & +a_{33}x_3 & +a_{34}x_4 & & \geq b_3 \\ & & & & & x_1, x_2, x_3, x_4 & \geq 0 \end{array}$$

See Exercise 5.16 for an almost identical set-up which explains the notation.