#### Student Number: 1 Student ID: 15169448

Minimise: 
$$z = +6x_1 - 2x_2 - 3x_3 - 5x_4 + 5x_5 - 5x_6 - 3x_7 + 5x_8 - 1x_9 + 1x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +1x_1 + 3x_2 - 4x_3 + 3x_4 + 4x_5 - 3x_6 - 2x_7 - 3x_8 - 2x_9 + 2x_{10} &\leq -13.74385196 \\ +1x_1 + 2x_2 + 2x_3 + 1x_4 - 4x_5 + 4x_7 + 3x_8 + 2x_9 - 2x_{10} &\leq 72.33070423 \\ -1x_1 + 4x_2 + 1x_5 + 2x_6 + 3x_8 + 3x_9 + 2x_{10} &\leq 188.87890777 \\ -5x_1 - 4x_2 - 3x_3 + 2x_4 + 1x_5 + 5x_6 + 5x_7 - 2x_8 - 1x_9 - 4x_{10} &\leq -122.93099460 \\ -3x_2 - 1x_3 + 2x_4 + 2x_5 - 1x_6 - 4x_7 - 3x_8 - 1x_9 - 4x_{10} &\leq -132.95940398 \\ -1x_1 - 3x_3 - 4x_4 + 4x_5 - 4x_6 - 3x_7 - 2x_8 - 3x_{10} &\leq -78.82923106 \\ -4x_1 + 5x_2 + 3x_3 + 4x_4 - 4x_5 - 4x_6 + 3x_7 + 3x_8 - 2x_9 - 4x_{10} &\leq 38.31906159 \\ +3x_2 - 1x_3 - 5x_4 + 3x_5 + 1x_6 + 4x_7 + 3x_8 + 2x_9 + 1x_{10} &\leq 171.98845199 \\ +4x_3 - 2x_4 + 3x_6 + 3x_7 + 1x_8 + 4x_9 - 4x_{10} &\leq 102.57112752 \\ +1x_1 - 2x_2 - 5x_3 - 3x_4 + 2x_5 + 2x_6 - 2x_7 + 1x_8 + 4x_9 + 3x_{10} &\leq 15.16049996 \end{aligned}$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 2 Student ID: 16108957

Minimise: 
$$z = -4x_1 + 3x_2 - 3x_3 - 3x_4 - 7x_5 - 2x_6 - 1x_7 - 3x_8 - 3x_9 - 4x_{10}$$

$$-4x_1 + 2x_2 - 4x_3 + 2x_4 - 4x_5 + 4x_6 - 1x_7 - 3x_8 + 3x_{10} \le -69.80476411$$

$$+1x_1 - 4x_2 + 4x_3 - 4x_4 + 2x_5 + 2x_7 - 5x_9 + 5x_{10} \le -12.37738164$$

$$-3x_1 + 3x_2 - 4x_3 + 2x_4 + 1x_5 + 1x_6 + 4x_7 - 4x_8 + 2x_9 - 1x_{10} \le 17.36342056$$

$$+2x_2 - 1x_3 - 1x_4 - 4x_5 + 1x_7 + 4x_8 - 5x_9 + 3x_{10} \le -32.07120909$$

$$-1x_1 + 4x_2 + 1x_3 + 3x_4 - 4x_5 - 4x_6 - 2x_7 - 1x_8 + 5x_9 - 4x_{10} \le -33.62244622$$

$$-2x_1 - 4x_2 + 5x_3 - 1x_4 + 5x_5 + 4x_6 - 3x_7 + 2x_9 + 1x_{10} \le 104.76751137$$

$$+2x_1 + 4x_2 - 2x_4 - 2x_6 - 1x_7 + 1x_8 + 4x_9 - 1x_{10} \le 61.76667647$$

$$+5x_3 + 5x_4 - 5x_5 - 2x_6 - 5x_7 + 2x_8 + 2x_{10} \le -36.14319415$$

$$+3x_1 + 1x_2 - 3x_3 + 2x_4 - 4x_5 + 1x_6 + 4x_7 - 1x_8 - 3x_9 - 2x_{10} \le -6.13019908$$

$$-3x_1 - 2x_2 - 1x_3 - 1x_4 - 4x_5 + 1x_7 - 4x_8 - 2x_9 - 4x_{10} \le -177.49312639$$

$$x_i \geq 0, i = 1, \ldots, n.$$

#### Student Number: 3 Student ID: 16155122

Minimise: 
$$z = -4x_1 - 5x_2 + 1x_3 - 4x_4 - 4x_5 + 4x_6 - 2x_7 - 6x_8 - 4x_9 - 2x_{10}$$

Constraint Inequalities:

$$+5x_{1} + 3x_{2} + 4x_{3} - 4x_{4} - 3x_{5} - 1x_{6} - 5x_{7} + 3x_{9} + 3x_{10} \leq 95.45361443$$

$$+5x_{1} - 4x_{2} + 1x_{3} + 5x_{4} - 2x_{5} + 3x_{6} + 3x_{7} + 4x_{8} - 4x_{9} + 1x_{10} \leq 42.07552186$$

$$-2x_{1} - 4x_{3} + 1x_{4} + 1x_{8} + 4x_{10} \leq 44.21016401$$

$$-2x_{1} + 2x_{2} - 1x_{3} - 3x_{4} + 1x_{5} + 1x_{6} - 4x_{8} + 4x_{9} + 1x_{10} \leq 14.34150253$$

$$+5x_{1} - 3x_{2} - 3x_{3} - 1x_{4} - 1x_{5} - 3x_{6} + 4x_{7} + 1x_{8} - 4x_{9} - 1x_{10} \leq -105.43642552$$

$$+3x_{1} + 5x_{3} + 4x_{4} + 4x_{5} - 4x_{6} - 1x_{7} - 3x_{8} + 1x_{9} + 1x_{10} \leq 26.08359905$$

$$+3x_{1} - 1x_{2} - 2x_{5} + 1x_{6} - 1x_{8} - 4x_{9} \leq -100.84352524$$

$$+1x_{1} + 3x_{2} + 4x_{3} + 1x_{5} + 5x_{6} + 2x_{7} - 1x_{9} - 4x_{10} \leq 66.38605655$$

$$+3x_{1} + 2x_{2} + 1x_{3} - 1x_{4} - 2x_{5} - 4x_{6} - 4x_{7} + 4x_{8} + 2x_{9} + 1x_{10} \leq 112.97942440$$

$$-1x_{1} + 5x_{2} - 3x_{4} - 2x_{5} - 3x_{6} + 2x_{8} - 4x_{9} + 5x_{10} \leq 64.30300093$$

$$x_i \geq 0, i = 1, \ldots, n.$$

# Student Number: 4 Student ID: 16176162

Minimise: 
$$z = -1x_1 - 2x_2 + 5x_3 + 5x_4 + 5x_5 - 4x_6 - 5x_7 + 1x_9 + 2x_{10}$$

$$\begin{aligned} +2x_1 - 4x_2 + 3x_3 + 5x_4 + 1x_5 + 3x_6 + 2x_7 + 3x_8 + 3x_9 &\leq 161.33789436 \\ -5x_1 + 2x_2 + 4x_3 - 1x_4 - 2x_5 + 3x_6 - 3x_7 + 3x_8 + 3x_9 + 3x_{10} &\leq 62.85873804 \\ -4x_1 + 3x_2 + 4x_3 - 3x_4 + 1x_6 - 3x_7 - 1x_8 + 1x_9 + 1x_{10} &\leq 30.02348821 \\ +4x_2 + 3x_4 - 1x_5 + 1x_6 - 4x_7 - 2x_8 - 4x_9 + 3x_{10} &\leq 33.62302634 \\ +3x_1 + 3x_2 + 3x_3 + 1x_4 - 4x_5 - 2x_6 + 2x_7 - 4x_8 + 1x_9 + 5x_{10} &\leq 148.70541326 \\ +3x_1 + 4x_2 + 4x_3 + 5x_4 + 1x_5 + 4x_7 + 2x_8 + 2x_9 + 2x_{10} &\leq 317.76962262 \\ +1x_1 + 3x_3 + 4x_5 + 5x_6 + 3x_7 + 1x_8 - 1x_9 + 1x_{10} &\leq 159.54051248 \\ -1x_1 + 5x_2 + 4x_3 - 2x_4 + 1x_5 + 2x_7 - 5x_8 - 3x_9 + 1x_{10} &\leq 95.54052375 \\ +4x_1 + 5x_2 - 1x_3 + 2x_4 - 2x_5 + 2x_6 - 4x_7 - 1x_8 - 2x_9 - 4x_{10} &\leq -53.49100436 \\ -2x_1 + 3x_3 + 4x_4 + 4x_5 - 1x_8 + 5x_9 + 4x_{10} &\leq 297.60358791 \end{aligned}$$

$$x_i \geq 0, i = 1, \ldots, n.$$

#### Student Number: 5 Student ID: 16178602

Minimise: 
$$z = -7x_1 - 7x_2 - 1x_3 - 6x_4 + 6x_5 + 1x_6 + 2x_7 - 3x_8 - 1x_9 - 7x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +1x_1 - 4x_2 + 2x_3 - 3x_4 + 1x_5 - 4x_6 + 4x_7 - 1x_8 - 5x_9 + 3x_{10} &\leq 29.79182901 \\ +4x_1 - 2x_2 - 4x_3 + 2x_4 - 2x_5 + 4x_6 + 2x_8 - 3x_9 - 4x_{10} &\leq -110.77946099 \\ +4x_2 + 5x_3 - 3x_4 - 1x_5 + 2x_6 - 5x_7 + 3x_8 + 4x_9 - 3x_{10} &\leq 49.50277095 \\ +1x_2 - 1x_3 + 1x_4 + 2x_5 + 3x_6 - 3x_7 + 4x_8 - 4x_9 + 1x_{10} &\leq -75.12471687 \\ +3x_1 - 4x_3 + 5x_4 + 3x_5 + 4x_6 + 1x_7 + 3x_8 + 3x_9 - 2x_{10} &\leq 120.63313060 \\ +2x_1 + 4x_2 - 4x_3 + 2x_4 - 2x_5 + 1x_6 - 4x_7 - 2x_8 - 3x_9 - 2x_{10} &\leq -195.42942800 \\ -2x_2 + 5x_3 + 5x_4 + 2x_5 + 4x_8 + 4x_9 + 3x_{10} &\leq 262.59343573 \\ +1x_1 + 4x_2 + 1x_3 + 3x_4 + 1x_6 - 3x_7 + 1x_9 + 1x_{10} &\leq 39.42331951 \\ +2x_1 + 1x_2 - 3x_5 + 5x_6 - 2x_7 - 2x_8 - 3x_9 + 2x_{10} &\leq -79.48570695 \\ +2x_2 + 1x_3 - 1x_4 - 2x_5 + 1x_6 - 4x_7 - 3x_8 + 3x_9 + 2x_{10} &\leq -2.81768491 \end{aligned}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 6 Student ID: 16186885

Minimise: 
$$z = +6x_1 + 5x_2 - 7x_3 + 4x_4 - 4x_5 - 1x_6 - 5x_7 - 4x_8 + 3x_9 - 6x_{10}$$

Constraint Inequalities:

$$-2x_1 - 1x_2 - 2x_3 + 3x_4 + 4x_5 + 3x_6 - 1x_7 + 4x_8 + 3x_9 + 3x_{10} \le 180.21754708$$

$$+1x_1 - 3x_2 - 5x_3 + 3x_4 - 3x_5 + 5x_6 - 4x_7 + 4x_8 - 5x_9 - 1x_{10} \le -8.75845824$$

$$-1x_1 - 3x_2 - 2x_3 + 1x_4 + 4x_5 + 3x_6 - 5x_7 + 5x_8 + 4x_9 - 2x_{10} \le 88.17417908$$

$$-2x_1 - 2x_2 + 3x_3 - 2x_4 - 4x_5 - 2x_6 + 2x_7 - 1x_8 + 2x_9 + 2x_{10} \le -146.02486283$$

$$-5x_1 + 4x_2 + 4x_3 + 3x_4 - 3x_5 - 5x_6 + 4x_7 + 2x_8 + 1x_9 + 2x_{10} \le 35.00141305$$

$$+2x_1 + 5x_3 - 3x_4 - 5x_5 + 2x_6 - 1x_7 + 3x_8 + 3x_9 + 4x_{10} \le -22.39788596$$

$$+4x_1 + 3x_2 - 5x_3 - 2x_4 + 3x_5 - 3x_7 + 1x_8 - 2x_9 + 4x_{10} \le 62.98202026$$

$$-1x_1 - 4x_2 + 2x_3 - 5x_4 + 2x_5 - 1x_6 + 4x_7 + 2x_8 - 3x_9 - 2x_{10} \le -41.60601077$$

$$+4x_1 + 1x_2 - 4x_3 - 1x_4 + 4x_5 + 4x_6 + 2x_7 + 2x_9 + 2x_{10} \le 189.90044994$$

$$+4x_1 + 1x_2 + 1x_3 - 5x_4 + 4x_5 - 4x_6 + 4x_7 + 4x_9 + 1x_{10} \le 92.08440333$$

#### Student Number: 7 Student ID: 16188748

Minimise: 
$$z = +4x_1 + 4x_2 + 2x_3 + 5x_4 + 2x_5 - 6x_6 - 3x_7 - 4x_8 - 5x_9 - 3x_{10}$$

Constraint Inequalities:

$$+3x_1 - 4x_2 - 5x_4 + 1x_6 + 2x_7 + 1x_8 - 1x_9 - 5x_{10} \le -15.15640854$$

$$+3x_1 - 2x_2 - 2x_4 + 4x_5 + 2x_6 + 5x_7 - 1x_8 - 1x_9 - 3x_{10} \le 54.65127316$$

$$+2x_1 - 4x_3 + 2x_4 - 4x_6 - 3x_7 + 2x_8 + 4x_9 - 3x_{10} \le -7.61466356$$

$$+1x_2 + 3x_3 + 4x_4 + 5x_6 - 4x_7 - 3x_8 + 4x_9 - 2x_{10} \le 43.42632934$$

$$-1x_1 + 3x_2 - 3x_3 + 3x_4 + 3x_5 - 4x_6 - 4x_7 + 5x_8 - 3x_9 + 5x_{10} \le -2.66806281$$

$$+2x_2 + 3x_3 - 4x_4 - 3x_5 + 4x_6 + 5x_7 - 4x_8 + 3x_9 + 1x_{10} \le 66.56667563$$

$$+1x_1 + 2x_2 - 5x_3 - 2x_4 - 2x_5 - 4x_6 + 5x_7 + 3x_8 + 2x_9 + 1x_{10} \le 38.83214124$$

$$-4x_1 + 1x_2 + 3x_3 + 4x_4 - 3x_5 + 4x_6 + 4x_7 + 2x_8 + 1x_9 - 2x_{10} \le 59.62132151$$

$$+4x_1 - 2x_2 - 1x_3 - 4x_4 + 3x_5 + 1x_6 + 2x_7 - 1x_8 - 1x_9 + 3x_{10} \le 28.94888597$$

$$+3x_2 + 4x_4 + 1x_5 + 3x_6 - 4x_7 + 4x_8 - 4x_9 - 5x_{10} \le 53.37668733$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

# Student Number: 8 Student ID: 17040434

Minimise: 
$$z = +5x_1 + 1x_2 - 6x_3 - 2x_4 - 1x_5 - 3x_6 - 3x_7 + 1x_8 - 2x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +2x_1 - 4x_2 - 1x_3 + 3x_4 - 5x_5 - 4x_6 - 1x_7 - 2x_8 - 5x_9 + 3x_{10} &\leq -119.80568154 \\ -2x_1 - 4x_2 + 4x_3 - 3x_4 - 3x_5 - 3x_6 + 4x_7 + 1x_8 + 1x_9 - 3x_{10} &\leq -44.29453111 \\ +2x_1 - 1x_2 + 1x_3 + 1x_4 + 1x_5 + 1x_6 + 4x_7 - 1x_8 + 3x_{10} &\leq 107.27131363 \\ +1x_1 + 2x_2 - 1x_3 + 2x_4 - 3x_5 + 2x_6 + 3x_7 + 1x_8 - 5x_9 &\leq 37.04394445 \\ -4x_1 + 3x_2 - 1x_3 + 4x_4 + 2x_5 - 2x_6 - 4x_7 + 4x_8 + 1x_9 - 1x_{10} &\leq -57.55526028 \\ -1x_1 - 1x_2 - 3x_3 + 1x_5 + 3x_7 + 4x_8 - 2x_9 + 2x_{10} &\leq 23.23547927 \\ -2x_1 + 2x_2 + 1x_3 + 4x_4 + 3x_5 - 3x_6 - 2x_7 - 5x_9 + 5x_{10} &\leq -7.05659848 \\ -4x_1 - 1x_2 + 2x_3 + 2x_4 - 2x_5 + 1x_6 + 1x_8 + 1x_9 + 5x_{10} &\leq 67.98979703 \\ -3x_2 + 1x_3 - 4x_4 - 3x_5 - 1x_6 - 4x_7 - 2x_8 + 5x_{10} &\leq -35.40714760 \\ -2x_1 + 2x_2 + 4x_3 + 4x_4 + 4x_5 - 4x_8 - 1x_9 &\leq 35.90480395 \end{aligned}$$

#### Student Number: 9 Student ID: 17184401

Minimise: 
$$z = -4x_1 + 2x_2 + 1x_3 + 5x_4 - 1x_6 + 1x_7 - 4x_8 - 6x_9 - 4x_{10}$$

Constraint Inequalities:

$$+3x_1 - 4x_2 + 1x_4 - 2x_6 - 5x_7 + 2x_8 + 1x_9 + 3x_{10} \le -0.49953170$$

$$-3x_1 + 1x_2 - 4x_3 + 3x_4 - 2x_5 - 1x_6 - 1x_7 - 4x_8 - 3x_9 - 5x_{10} \le -139.59018733$$

$$+2x_1 - 4x_2 - 1x_4 - 4x_5 + 3x_6 + 4x_7 + 4x_8 + 1x_9 - 4x_{10} \le 2.74355453$$

$$-5x_1 - 2x_2 + 3x_3 + 2x_4 - 2x_5 + 1x_6 - 5x_7 + 4x_8 + 5x_9 + 4x_{10} \le -21.97324709$$

$$+5x_1 + 1x_2 + 2x_3 + 3x_4 - 1x_5 + 3x_6 + 4x_8 + 2x_9 - 2x_{10} \le 197.17938443$$

$$-4x_1 - 5x_2 - 3x_3 + 2x_4 + 4x_5 + 3x_7 + 1x_8 + 4x_9 + 4x_{10} \le 84.69524440$$

$$-4x_1 + 5x_3 + 1x_4 - 3x_5 - 1x_6 + 2x_7 - 1x_8 + 4x_9 + 2x_{10} \le -40.26335701$$

$$+2x_1 - 2x_2 + 5x_3 + 5x_4 - 4x_5 - 2x_6 - 3x_7 - 4x_8 + 4x_9 + 2x_{10} \le 20.48424374$$

$$-2x_1 - 2x_2 + 4x_3 + 4x_4 - 5x_5 - 4x_6 + 5x_7 - 1x_{10} \le -93.58172008$$

$$+2x_1 - 1x_3 - 4x_4 + 3x_5 + 2x_6 + 4x_7 - 1x_8 - 3x_9 + 4x_{10} \le 70.98441094$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 10 Student ID: 17184428

Minimise: 
$$z = +2x_1 - 3x_2 + 5x_3 - 2x_4 - 6x_5 - 6x_6 - 2x_7 + 1x_8 - 7x_9 - 3x_{10}$$

Constraint Inequalities:

$$+3x_1 + 4x_2 - 4x_4 + 4x_5 + 3x_6 + 3x_7 + 3x_9 - 4x_{10} \le 108.88865964$$

$$-1x_1 - 3x_2 + 2x_3 - 1x_4 + 4x_5 + 3x_6 - 3x_7 + 3x_8 + 1x_9 + 3x_{10} \le 26.87998388$$

$$-4x_1 - 4x_4 + 2x_5 - 2x_6 + 3x_7 - 1x_8 - 5x_{10} \le -60.44591736$$

$$+5x_1 + 2x_2 - 3x_3 - 4x_5 + 3x_6 - 2x_7 + 5x_8 - 5x_9 - 2x_{10} \le -40.24943444$$

$$+2x_1 + 2x_2 + 1x_4 - 2x_5 - 1x_6 - 1x_8 - 2x_9 + 2x_{10} \le 10.57464236$$

$$-1x_1 + 3x_2 - 5x_3 - 2x_4 - 2x_5 + 4x_6 - 2x_7 - 4x_8 + 2x_9 + 1x_{10} \le -29.62654637$$

$$-3x_1 + 2x_2 + 3x_3 + 4x_4 + 4x_5 + 3x_6 + 1x_7 - 3x_8 + 4x_9 + 3x_{10} \le 179.11856899$$

$$-2x_1 - 3x_3 + 2x_4 + 2x_5 - 2x_6 - 1x_7 + 1x_8 + 2x_9 - 4x_{10} \le 0.65640143$$

$$-4x_2 + 2x_4 - 2x_5 - 3x_6 - 2x_7 + 4x_8 + 2x_9 - 4x_{10} \le -77.48514356$$

$$-1x_1 - 1x_2 + 2x_3 + 5x_4 - 4x_5 - 1x_6 - 2x_7 + 1x_8 + 3x_9 \le 7.91727520$$

#### Student Number: 11 Student ID: 17189942

Minimise: 
$$z = -4x_1 + 1x_3 + 4x_4 + 4x_5 - 4x_6 + 2x_7 + 4x_8 - 4x_9 + 4x_{10}$$

Constraint Inequalities:

$$+3x_2+1x_3-3x_4+2x_5+3x_6-2x_7-3x_8+3x_9-4x_{10} \leq 8.91425256$$
 
$$-4x_1+3x_2+3x_3-1x_4-1x_5+1x_6+2x_7-5x_8-4x_9+5x_{10} \leq -35.00842379$$
 
$$+1x_1+3x_2+4x_3+4x_5-1x_6+3x_7+4x_8-1x_9-4x_{10} \leq 150.36275850$$
 
$$-1x_1-1x_2-2x_3-3x_4-2x_5-4x_6+2x_7+1x_8+3x_9-1x_{10} \leq -84.78149536$$
 
$$-1x_1-5x_2-4x_3+1x_4+1x_5+2x_6+2x_7-4x_8-1x_9-3x_{10} \leq -84.64902010$$
 
$$-2x_1-5x_2+1x_3-5x_4-2x_5+5x_6+5x_7-1x_8+5x_9+3x_{10} \leq -55.00752246$$
 
$$-1x_1+4x_2-3x_3+3x_4+4x_5+1x_6-1x_7-4x_8-1x_9+3x_{10} \leq 98.34362148$$
 
$$-2x_1+4x_2-4x_3-2x_4+3x_5-3x_6+2x_7-3x_8+3x_9-3x_{10} \leq 5.01665404$$
 
$$+4x_1-2x_2-1x_3-3x_4+1x_5+3x_6+4x_7-4x_8+2x_9+4x_{10} \leq 72.92770552$$
 
$$+1x_1+3x_2+4x_3-2x_4-1x_5+5x_6-4x_7-4x_9-1x_{10} \leq -32.51166815$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 12 Student ID: 17198887

Minimise: 
$$z = +2x_1 + 4x_2 - 5x_3 - 5x_4 - 4x_5 + 4x_7 + 1x_8 - 3x_9 + 2x_{10}$$

Constraint Inequalities:

$$\begin{array}{l} -4x_1 + 1x_2 + 5x_3 + 4x_4 + 1x_5 + 3x_6 - 3x_7 - 4x_8 + 3x_9 - 3x_{10} \leq 132.47697651 \\ +2x_1 + 4x_3 - 5x_4 + 4x_5 - 3x_6 + 4x_7 + 2x_8 - 1x_9 + 1x_{10} \leq -36.03002249 \\ +3x_1 - 2x_2 - 3x_4 + 3x_5 + 5x_6 - 3x_7 + 3x_8 - 4x_9 - 1x_{10} \leq 12.71810721 \\ +5x_1 - 5x_2 + 4x_3 + 3x_4 + 4x_5 + 4x_6 - 5x_7 + 3x_8 + 5x_9 + 1x_{10} \leq 163.12274951 \\ -4x_1 + 2x_2 + 3x_3 - 2x_4 - 1x_5 + 3x_6 + 4x_7 - 4x_8 + 2x_9 + 3x_{10} \leq 59.65633460 \\ +2x_1 - 1x_2 + 5x_3 + 4x_4 + 1x_5 - 1x_6 + 5x_7 + 4x_8 + 3x_9 + 3x_{10} \leq 148.77106684 \\ -4x_1 + 5x_2 - 1x_3 - 4x_4 + 2x_5 - 4x_6 + 2x_7 - 1x_8 + 5x_9 - 1x_{10} \leq -1.47155816 \\ -2x_1 + 3x_2 - 3x_3 + 5x_4 - 3x_5 + 1x_6 + 2x_7 - 2x_8 + 1x_9 + 2x_{10} \leq 89.58354168 \\ -1x_1 - 1x_2 + 4x_3 - 3x_4 + 4x_5 + 5x_6 + 5x_8 - 5x_9 - 4x_{10} \leq 46.71502462 \\ -5x_1 + 1x_2 + 5x_3 - 4x_4 - 1x_5 - 1x_6 + 1x_7 - 4x_8 + 3x_{10} \leq -65.54381183 \end{array}$$

#### Student Number: 13 Student ID: 17200849

Minimise: 
$$z = -6x_1 - 5x_2 - 3x_3 + 3x_4 + 6x_5 - 2x_6 + 5x_7 + 1x_8 - 6x_9$$

Constraint Inequalities:

$$-4x_1 + 1x_2 + 4x_3 - 1x_4 - 3x_5 + 4x_6 + 3x_7 + 3x_9 - 3x_{10} \le 42.37117283$$

$$-1x_3 + 1x_4 + 1x_5 + 5x_6 + 4x_7 + 5x_8 - 2x_9 + 4x_{10} \le 73.24675497$$

$$-3x_2 + 4x_3 - 4x_5 - 1x_6 + 2x_7 - 3x_8 + 2x_9 + 1x_{10} \le 38.92796192$$

$$+3x_1 + 4x_2 + 2x_3 + 1x_4 + 2x_5 + 4x_6 + 1x_7 + 2x_8 + 1x_9 - 1x_{10} \le 164.99043369$$

$$-3x_2 + 4x_3 + 1x_4 + 2x_5 + 2x_6 + 5x_7 + 1x_8 + 4x_9 - 2x_{10} \le 131.91553025$$

$$+2x_1 + 2x_3 + 4x_4 - 4x_5 + 5x_6 - 4x_7 + 1x_9 - 4x_{10} \le 65.24843987$$

$$+5x_1 + 5x_2 + 1x_3 - 4x_4 + 1x_5 + 3x_6 - 3x_7 + 2x_8 + 3x_9 - 2x_{10} \le 126.71119990$$

$$+2x_1 + 1x_2 - 4x_3 + 1x_4 + 3x_5 - 1x_6 + 3x_7 + 4x_8 + 3x_9 - 2x_{10} \le 80.87404561$$

$$+1x_1 - 2x_2 + 3x_3 + 1x_4 - 3x_8 - 2x_9 + 3x_{10} \le 17.21113002$$

$$-5x_1 + 3x_2 + 1x_3 - 1x_4 - 3x_5 + 1x_6 + 4x_7 - 3x_8 + 3x_9 + 5x_{10} \le 31.18566075$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 14 Student ID: 17202566

Minimise: 
$$z = +3x_1 + 4x_2 - 1x_3 + 4x_4 + 1x_5 - 4x_6 - 5x_7 - 5x_8 + 3x_9$$

$$+1x_2 - 1x_3 - 4x_4 - 2x_5 - 4x_6 + 1x_7 - 5x_8 - 3x_9 + 3x_{10} \le -107.79850563$$

$$+1x_1 - 2x_2 + 2x_3 + 5x_4 + 4x_5 - 4x_6 + 5x_7 + 5x_8 + 1x_9 + 1x_{10} \le 226.37758313$$

$$-1x_2 + 1x_3 - 1x_4 + 1x_6 + 4x_8 + 1x_9 - 2x_{10} \le 49.79513215$$

$$-5x_1 - 3x_2 + 4x_3 + 4x_4 - 2x_5 + 4x_6 + 4x_7 + 1x_8 - 5x_9 - 3x_{10} \le 68.96458514$$

$$-1x_2 + 1x_3 + 5x_4 + 4x_5 - 4x_6 + 2x_8 - 4x_{10} \le 50.90053195$$

$$-5x_1 + 4x_2 + 2x_3 - 2x_4 + 3x_5 + 4x_6 + 3x_7 + 4x_8 \le 95.13454538$$

$$+3x_1 - 5x_2 + 3x_4 - 4x_5 + 4x_7 - 1x_8 + 4x_9 - 4x_{10} \le 78.58047512$$

$$+3x_1 + 5x_2 + 1x_3 - 5x_4 + 5x_5 - 2x_6 + 3x_7 + 4x_8 - 3x_9 + 3x_{10} \le 142.05955751$$

$$-5x_2 - 3x_3 + 4x_4 - 4x_5 + 3x_6 + 3x_7 + 5x_8 + 1x_9 - 5x_{10} \le 50.54928524$$

$$+3x_1 - 2x_4 + 4x_6 + 4x_7 - 1x_8 - 5x_9 - 5x_{10} \le 47.05529792$$

$$x_i \geq 0, i = 1, \ldots, n.$$

#### Student Number: 15 Student ID: 17204607

Minimise: 
$$z = +6x_1 + 5x_2 - 7x_3 - 2x_4 - 6x_5 - 5x_6 + 5x_7 - 3x_8 - 3x_9 - 1x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +2x_1 + 5x_2 - 4x_3 + 1x_4 - 4x_5 - 3x_6 - 2x_7 + 1x_8 + 1x_9 - 4x_{10} &\leq -166.16189545 \\ +1x_1 + 2x_2 - 3x_3 - 2x_5 - 2x_6 - 2x_7 - 4x_8 - 2x_9 - 4x_{10} &\leq -212.15550883 \\ +1x_2 - 1x_3 + 1x_4 + 1x_5 - 3x_6 - 1x_7 - 3x_8 - 2x_9 - 4x_{10} &\leq -104.83235715 \\ +2x_1 - 2x_2 + 2x_3 + 4x_4 - 1x_5 - 3x_6 - 3x_7 - 2x_9 + 5x_{10} &\leq -31.57697964 \\ +5x_1 - 5x_2 - 5x_3 + 2x_4 + 4x_5 - 2x_6 - 1x_7 - 4x_8 + 4x_9 &\leq 15.56197342 \\ +3x_1 + 5x_2 - 3x_3 + 3x_4 + 5x_5 - 2x_6 + 2x_7 + 4x_8 + 4x_9 + 1x_{10} &\leq 196.50011049 \\ +1x_1 - 3x_2 + 5x_3 - 2x_4 + 1x_5 + 2x_6 - 2x_7 + 4x_8 - 1x_{10} &\leq 92.98290016 \\ +4x_1 + 2x_2 + 5x_3 - 3x_4 + 3x_5 + 2x_6 + 5x_7 + 2x_8 + 3x_{10} &\leq 230.49648474 \\ -3x_1 + 3x_2 - 1x_3 + 3x_4 + 3x_5 - 2x_6 + 5x_7 - 2x_8 + 4x_9 + 2x_{10} &\leq 190.34676092 \\ -1x_1 + 1x_2 - 2x_3 - 5x_4 - 4x_5 - 5x_6 + 3x_7 - 2x_8 + 1x_9 + 2x_{10} &\leq -176.73219541 \end{aligned}$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 16 Student ID: 17205441

Minimise: 
$$z = +1x_1 - 3x_2 - 5x_3 - 6x_4 - 5x_5 + 3x_6 - 7x_7 + 4x_8 - 5x_9 - 2x_{10}$$

$$+2x_1 - 2x_2 + 2x_3 - 5x_4 - 5x_5 - 4x_6 + 4x_9 - 1x_{10} \le 22.16542653 \\ +1x_2 - 2x_3 - 4x_4 + 1x_5 - 3x_6 + 4x_7 - 4x_8 - 3x_9 - 1x_{10} \le -89.86320563 \\ +5x_2 - 4x_3 + 1x_5 - 3x_6 - 3x_7 + 3x_8 + 2x_9 - 4x_{10} \le 13.10472624 \\ -1x_1 + 4x_2 + 5x_3 - 3x_4 + 5x_5 - 3x_6 + 4x_7 + 3x_8 - 3x_9 + 5x_{10} \le 89.87037513 \\ +4x_1 + 4x_2 + 2x_3 - 1x_4 + 4x_5 + 1x_6 - 5x_7 + 3x_8 - 4x_9 + 1x_{10} \le 77.80457421 \\ +3x_2 - 3x_4 + 3x_5 - 4x_6 - 4x_7 + 2x_8 - 1x_9 + 3x_{10} \le 21.29738891 \\ +1x_1 + 2x_2 - 4x_3 - 1x_4 - 3x_5 - 4x_6 + 2x_7 + 3x_8 + 2x_{10} \le 0.47198443 \\ -5x_1 + 2x_2 + 4x_3 + 4x_4 + 2x_5 - 3x_6 + 4x_7 - 5x_8 - 4x_9 + 4x_{10} \le -59.40050405 \\ -2x_1 + 2x_4 - 3x_5 + 2x_6 + 5x_7 + 3x_8 - 2x_9 + 4x_{10} \le -0.52001537 \\ -1x_2 + 2x_4 - 1x_5 + 2x_6 + 5x_7 - 4x_8 + 2x_9 - 2x_{10} \le 6.45761779 \\ \end{array}$$

$$x_i \ge 0, i = 1, \dots, n.$$

#### Student Number: 17 Student ID: 17209226

Minimise: 
$$z = +3x_1 + 5x_2 - 5x_3 + 5x_4 - 2x_5 - 3x_6 - 7x_8 - 1x_9 - 2x_{10}$$

Constraint Inequalities:

$$+3x_1 + 4x_3 + 1x_4 + 1x_5 + 1x_6 - 3x_7 + 4x_8 - 2x_9 + 1x_{10} \le 109.66755867$$

$$-2x_1 - 2x_2 - 1x_3 - 1x_4 + 4x_5 - 3x_6 + 1x_7 + 4x_8 + 3x_9 + 3x_{10} \le 45.57056925$$

$$+2x_1 + 3x_2 + 3x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 + 4x_8 - 3x_9 + 1x_{10} \le 160.55068056$$

$$-4x_2 - 2x_3 - 1x_4 - 1x_5 - 2x_6 + 2x_7 + 2x_8 - 3x_9 + 2x_{10} \le 27.63987872$$

$$+3x_2 + 5x_3 + 1x_5 - 3x_6 + 4x_7 + 2x_8 - 3x_9 + 5x_{10} \le 149.53955345$$

$$+2x_1 + 3x_2 + 4x_3 + 3x_4 - 4x_5 - 3x_6 + 1x_7 + 2x_8 + 1x_9 + 2x_{10} \le 117.23048537$$

$$-4x_2 + 4x_3 + 3x_5 + 4x_6 - 2x_8 - 3x_9 - 1x_{10} \le 27.27763741$$

$$+1x_1 - 3x_2 + 2x_3 - 3x_4 - 4x_5 + 3x_6 - 3x_7 + 3x_9 - 4x_{10} \le -22.34603260$$

$$+3x_1 - 2x_2 + 3x_3 + 3x_5 + 3x_6 - 1x_7 + 5x_8 + 1x_9 + 2x_{10} \le 155.08773619$$

$$+2x_1 + 4x_4 + 5x_5 + 3x_7 - 1x_8 + 2x_9 - 3x_{10} \le 81.27450201$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 18 Student ID: 17209293

$$\mbox{Minimise:} \quad z = +2x_1 - 3x_2 - 4x_3 - 4x_4 + 1x_5 - 2x_6 + 2x_7 - 2x_8 + 5x_9 + 6x_{10}$$

Constraint Inequalities:

$$+2x_2 + 2x_3 - 2x_4 + 3x_5 + 4x_6 + 2x_7 + 1x_8 - 1x_9 + 2x_{10} \le 211.94042255 \\ -2x_1 - 2x_2 + 2x_3 - 1x_4 + 3x_5 - 1x_6 - 2x_7 + 2x_8 - 4x_9 - 2x_{10} \le -74.68104584 \\ +3x_1 + 2x_2 - 1x_3 - 3x_4 - 1x_5 + 3x_6 + 5x_7 - 3x_8 + 5x_9 + 1x_{10} \le 164.78819021 \\ -4x_1 - 3x_2 + 3x_4 + 2x_5 - 2x_6 + 4x_8 - 1x_9 + 1x_{10} \le -29.50853224 \\ -3x_1 + 1x_2 + 4x_4 - 2x_5 - 3x_6 - 1x_7 - 2x_8 - 1x_9 + 4x_{10} \le -101.20611465 \\ +1x_1 + 1x_2 - 5x_3 + 1x_4 - 5x_5 - 2x_6 - 1x_7 + 1x_9 - 5x_{10} \le -204.00267199 \\ -2x_3 + 3x_4 - 5x_5 - 2x_6 - 4x_7 - 4x_9 - 1x_{10} \le -224.50389987 \\ +4x_1 - 2x_2 - 1x_3 + 4x_5 - 4x_6 - 1x_7 - 2x_8 - 2x_9 + 5x_{10} \le -30.78686142 \\ -3x_1 - 2x_2 + 4x_3 - 4x_5 - 2x_6 + 3x_7 - 5x_9 + 2x_{10} \le -94.26864065 \\ -4x_1 - 4x_2 - 2x_3 + 1x_4 - 2x_5 - 1x_6 + 4x_7 - 5x_8 + 2x_9 \le -210.75063567 \\ \end{array}$$

#### Student Number: 19 Student ID: 17211395

Minimise: 
$$z = +6x_1 + 3x_2 - 4x_3 + 1x_4 - 5x_5 - 7x_6 + 4x_7 - 5x_8 + 3x_9 - 6x_{10}$$

Constraint Inequalities:

$$-3x_2 - 2x_3 + 1x_4 - 3x_5 + 1x_6 + 1x_7 - 3x_8 - 3x_9 + 2x_{10} \le -89.08753857$$

$$+3x_1 - 4x_2 - 2x_3 + 3x_4 - 2x_6 + 2x_7 + 4x_8 + 4x_9 \le 149.54527889$$

$$+1x_2 - 3x_3 - 3x_4 - 1x_5 + 1x_6 - 5x_8 + 4x_9 + 3x_{10} \le 15.00430053$$

$$-1x_2 + 4x_3 + 2x_4 - 1x_5 + 4x_6 - 4x_7 + 2x_8 + 2x_9 + 1x_{10} \le 49.46866066$$

$$+2x_1 - 4x_2 + 3x_3 + 3x_4 - 2x_5 - 2x_6 + 3x_7 - 1x_8 - 4x_9 - 5x_{10} \le -65.78931896$$

$$+2x_1 + 2x_2 + 3x_4 + 1x_5 - 2x_6 - 1x_8 - 2x_9 - 3x_{10} \le 29.63406367$$

$$-3x_1 + 2x_2 - 2x_3 - 5x_4 + 4x_5 - 4x_6 - 2x_7 - 5x_8 + 2x_9 - 4x_{10} \le -171.82013265$$

$$+4x_1 + 1x_2 + 2x_3 - 3x_4 - 1x_5 + 2x_6 + 2x_7 + 2x_8 + 1x_9 - 2x_{10} \le 86.94228626$$

$$+3x_1 + 1x_2 + 3x_3 - 1x_4 - 2x_5 - 4x_6 - 4x_7 + 3x_8 - 1x_9 + 3x_{10} \le -79.10553338$$

$$+5x_1 + 2x_2 + 5x_3 + 3x_4 + 3x_5 + 3x_6 - 2x_7 - 1x_{10} \le 158.22064681$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 20 Student ID: 17213037

Minimise: 
$$z = -3x_1 + 4x_2 + 5x_3 + 3x_4 - 6x_6 + 3x_7 - 1x_8 + 5x_9 + 3x_{10}$$

Constraint Inequalities:

$$+4x_1 + 2x_2 + 4x_3 + 3x_5 - 4x_6 - 2x_7 - 2x_8 - 5x_9 - 3x_{10} \le 3.26654803 \\ +4x_1 - 4x_2 + 4x_3 + 4x_4 + 2x_7 - 1x_8 + 3x_{10} \le 107.76119953 \\ +2x_1 - 1x_2 + 1x_3 - 2x_4 - 4x_5 + 2x_6 + 3x_7 + 1x_8 - 4x_9 + 2x_{10} \le 32.22218673 \\ +2x_1 + 2x_2 + 1x_3 - 2x_4 + 5x_5 + 1x_6 - 2x_7 + 4x_8 - 5x_9 - 3x_{10} \le 72.30388159 \\ +5x_1 - 2x_2 + 4x_3 - 4x_6 + 5x_8 - 1x_9 \le 121.87409818 \\ +2x_2 - 1x_4 + 4x_6 - 4x_7 + 3x_8 + 1x_{10} \le 47.89390230 \\ +3x_1 - 3x_3 - 1x_4 + 1x_5 - 3x_6 - 2x_7 + 1x_8 + 3x_9 - 5x_{10} \le -20.06399827 \\ -5x_2 + 2x_3 + 2x_4 - 2x_5 + 3x_6 + 3x_7 - 1x_8 + 5x_9 + 1x_{10} \le 53.45967143 \\ +5x_1 - 3x_2 + 3x_3 - 2x_5 + 1x_6 - 1x_7 - 4x_8 + 3x_9 - 4x_{10} \le -2.83649901 \\ -1x_2 + 2x_3 + 4x_4 - 3x_5 - 3x_6 + 1x_7 + 3x_8 - 5x_{10} \le 53.29227672 \\ \end{aligned}$$

#### Student Number: 21 Student ID: 17213681

Minimise: 
$$z = -1x_1 + 3x_2 - 7x_3 + 4x_4 + 3x_5 - 5x_6 - 2x_7 + 5x_8 + 2x_9 - 7x_{10}$$

Constraint Inequalities:

$$+1x_1 - 4x_2 - 2x_4 + 4x_5 - 4x_6 - 3x_8 - 3x_9 + 5x_{10} \le -3.20727086 \\ +4x_1 - 3x_3 - 5x_4 - 2x_5 - 2x_6 - 4x_7 - 1x_8 + 4x_9 - 3x_{10} \le -182.67657322 \\ -4x_1 - 2x_2 + 5x_4 - 3x_5 + 2x_6 + 1x_7 - 3x_8 - 4x_9 - 5x_{10} \le -128.92206405 \\ -1x_1 + 4x_2 - 2x_3 - 1x_4 + 4x_6 + 1x_7 - 2x_8 \le -6.11069160 \\ +3x_1 + 4x_2 + 4x_3 - 5x_4 - 2x_5 + 1x_6 - 4x_7 - 1x_8 + 1x_9 - 2x_{10} \le -18.94298074 \\ -4x_1 - 3x_2 + 2x_3 + 5x_4 + 5x_5 - 3x_6 + 4x_7 + 4x_8 + 3x_9 + 4x_{10} \le 190.15807376 \\ -1x_1 + 4x_2 - 3x_3 + 4x_4 - 2x_5 - 1x_6 + 2x_7 + 4x_8 + 3x_9 - 3x_{10} \le 5.73591823 \\ -3x_1 - 4x_2 + 4x_4 + 5x_5 + 4x_6 - 2x_7 + 3x_8 - 5x_9 - 2x_{10} \le 82.82790413 \\ +3x_1 + 2x_2 - 2x_4 + 2x_5 + 4x_6 - 4x_7 - 3x_8 - 4x_9 + 1x_{10} \le 59.42940452 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_3 + 4x_5 + 2x_6 - 2x_7 + 2x_8 - 5x_9 - 3x_{10} \le 131.44895977 \\ +4x_1 + 3x_2 + 2x_3 + 2x_5 + 2x_5$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 22 Student ID: 17214297

Minimise: 
$$z = -3x_1 + 1x_2 - 7x_3 - 7x_4 - 2x_5 + 4x_6 - 7x_8 + 3x_9 + 4x_{10}$$

Constraint Inequalities:

$$\begin{array}{c} -4x_1 + 1x_2 + 1x_3 - 2x_4 - 4x_5 + 3x_6 - 4x_7 - 1x_8 + 1x_9 - 1x_{10} \leq -110.30017432 \\ -2x_1 - 5x_2 - 4x_3 - 2x_4 + 2x_5 + 2x_6 - 4x_7 + 2x_{10} \leq -201.15934243 \\ +3x_1 + 1x_2 + 3x_3 - 2x_4 + 3x_5 + 4x_6 + 5x_7 - 5x_8 - 5x_9 - 3x_{10} \leq 77.07234204 \\ +3x_1 + 4x_2 + 4x_3 + 2x_4 - 4x_5 - 2x_6 + 1x_7 - 5x_8 + 5x_9 - 3x_{10} \leq 194.06955816 \\ -1x_2 - 3x_3 - 4x_4 + 1x_5 + 4x_6 - 4x_7 - 1x_8 + 2x_9 - 4x_{10} \leq -116.67296550 \\ -2x_1 + 3x_2 + 2x_4 - 3x_5 - 2x_6 + 5x_7 + 2x_8 - 1x_9 - 1x_{10} \leq 60.87560819 \\ -1x_2 - 4x_4 - 1x_5 - 4x_8 + 1x_{10} \leq -102.99502173 \\ -1x_1 + 1x_2 - 4x_3 + 4x_4 + 4x_5 + 4x_7 + 4x_8 + 4x_9 + 2x_{10} \leq 195.46145405 \\ +1x_1 - 4x_2 + 4x_3 + 1x_4 - 4x_6 + 4x_7 + 2x_8 + 2x_{10} \leq 58.48787182 \\ -3x_1 - 3x_2 + 4x_3 + 2x_4 + 4x_5 - 2x_6 - 1x_8 + 1x_9 + 5x_{10} \leq 61.73056433 \end{array}$$

#### Student Number: 23 Student ID: 17214505

Minimise: 
$$z = -6x_1 + 1x_2 + 4x_3 + 4x_4 + 4x_5 + 5x_7 - 1x_8 + 4x_9 + 2x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +2x_1 - 5x_2 - 5x_3 + 3x_4 + 3x_5 + 1x_6 - 1x_7 + 2x_8 - 5x_9 + 2x_{10} &\leq -45.15645793 \\ +4x_1 - 4x_2 + 3x_3 - 2x_4 + 3x_5 + 5x_6 + 1x_7 + 2x_8 + 2x_9 - 2x_{10} &\leq 139.50776802 \\ &\quad +5x_3 - 2x_4 - 4x_6 - 2x_7 + 4x_8 + 3x_9 + 4x_{10} &\leq 63.56865148 \\ +4x_1 - 1x_2 - 1x_3 - 5x_4 - 2x_5 + 1x_6 - 4x_7 - 2x_8 + 2x_9 + 2x_{10} &\leq -64.05390697 \\ -4x_1 - 3x_2 - 2x_3 - 4x_4 + 1x_5 + 5x_6 + 2x_7 + 3x_8 - 1x_9 - 1x_{10} &\leq 27.66412967 \\ -1x_1 + 3x_2 - 4x_3 + 2x_4 - 2x_5 + 2x_6 - 4x_7 + 4x_8 - 5x_9 + 1x_{10} &\leq 22.68089162 \\ &\quad -2x_1 + 3x_2 + 1x_3 + 5x_4 + 1x_5 + 2x_6 - 2x_7 - 3x_9 - 2x_{10} &\leq 32.72274642 \\ &\quad -3x_2 - 1x_3 - 1x_4 - 4x_5 + 5x_6 + 5x_7 + 3x_8 - 4x_9 &\leq 9.76768326 \\ +2x_1 + 2x_2 - 4x_3 + 5x_4 + 5x_5 + 2x_6 - 4x_7 - 3x_8 + 1x_9 + 4x_{10} &\leq 134.67946056 \\ &\quad -2x_1 - 4x_2 - 4x_4 - 1x_5 - 3x_6 - 2x_7 + 3x_8 + 4x_9 - 1x_{10} &\leq -94.86556014 \end{aligned}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 24 Student ID: 17216389

Minimise: 
$$z = -3x_1 + 2x_2 - 4x_4 + 4x_5 - 5x_6 + 3x_7 - 5x_8 - 4x_9 - 4x_{10}$$

Constraint Inequalities:

$$-4x_1 + 3x_2 - 2x_4 + 1x_5 - 2x_6 - 2x_7 - 1x_8 + 1x_9 - 4x_{10} \le -119.46599009$$

$$+2x_1 - 4x_2 - 3x_3 + 1x_4 + 2x_5 + 4x_6 - 4x_7 - 3x_8 - 1x_9 + 2x_{10} \le 30.45514868$$

$$+4x_1 + 3x_2 + 3x_3 - 3x_4 - 1x_5 - 4x_6 - 1x_7 + 4x_8 + 1x_9 + 4x_{10} \le 115.52048897$$

$$-1x_2 + 4x_3 + 5x_4 - 1x_5 + 4x_6 + 1x_7 + 1x_8 + 2x_{10} \le 146.30095546$$

$$-4x_1 + 4x_2 - 4x_3 - 3x_4 + 2x_5 - 4x_6 - 1x_7 - 1x_8 + 2x_9 + 5x_{10} \le -51.39523017$$

$$-4x_1 + 1x_2 - 5x_3 - 3x_4 - 4x_5 + 1x_6 - 2x_7 - 2x_8 - 1x_{10} \le -149.65075855$$

$$-3x_1 - 2x_2 + 4x_3 - 2x_4 - 3x_5 + 2x_6 - 2x_7 - 1x_8 + 5x_9 - 2x_{10} \le -1.10928519$$

$$+5x_1 + 1x_2 - 1x_3 - 4x_4 + 1x_5 + 5x_6 - 2x_7 - 1x_8 - 4x_9 + 4x_{10} \le 93.06588933$$

$$+1x_1 + 5x_2 + 3x_3 - 4x_4 - 4x_5 - 3x_6 + 3x_7 + 1x_8 + 5x_9 + 3x_{10} \le 116.42794166$$

$$-5x_1 - 4x_2 + 1x_3 - 1x_4 + 4x_5 + 5x_7 - 3x_8 - 3x_9 + 5x_{10} \le -125.02965204$$

#### Student Number: 25 Student ID: 17216869

Minimise: 
$$z = -7x_2 + 3x_3 - 1x_4 - 1x_5 - 4x_6 - 6x_7 - 2x_8 + 3x_9$$

Constraint Inequalities:

$$-4x_1 + 3x_2 - 1x_3 - 3x_4 + 2x_5 + 5x_6 + 1x_7 + 4x_8 + 1x_{10} \le 71.28898385 \\ +4x_1 - 3x_2 + 4x_4 - 3x_5 - 1x_6 + 2x_7 + 5x_8 + 5x_9 - 2x_{10} \le 121.44956476 \\ -5x_1 - 1x_2 + 5x_3 - 2x_4 - 2x_5 - 2x_6 + 1x_7 - 1x_8 - 2x_9 + 1x_{10} \le -130.32723384 \\ +2x_1 + 2x_2 + 1x_3 + 2x_4 + 4x_5 + 2x_6 - 2x_7 + 4x_8 + 2x_9 + 5x_{10} \le 228.42379579 \\ -3x_2 + 4x_4 + 4x_6 + 4x_7 + 5x_8 + 3x_9 - 1x_{10} \le 194.17573201 \\ -4x_1 + 3x_2 - 4x_4 + 4x_5 - 2x_6 - 1x_7 + 3x_8 + 4x_9 - 4x_{10} \le -149.44941774 \\ -1x_1 + 4x_2 + 1x_3 - 4x_4 + 3x_5 + 3x_6 - 4x_7 - 4x_8 - 1x_9 + 1x_{10} \le -32.66818950 \\ +3x_1 + 3x_2 + 4x_3 - 1x_4 + 4x_6 - 3x_8 + 3x_9 - 4x_{10} \le 87.66043187 \\ -1x_1 - 4x_2 - 1x_3 + 1x_4 - 4x_6 - 2x_7 - 1x_8 - 2x_9 - 2x_{10} \le -211.22204216 \\ +3x_2 + 4x_3 - 3x_4 - 4x_5 + 4x_6 - 3x_7 + 2x_8 + 3x_9 + 4x_{10} \le 128.20342192$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 26 Student ID: 17217466

Minimise: 
$$z = +5x_1 + 5x_3 - 3x_4 + 1x_5 - 5x_6 + 3x_7 - 6x_8 - 3x_9 - 5x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +4x_1 + 5x_2 + 4x_3 + 3x_4 - 4x_5 - 4x_6 - 1x_7 + 2x_8 + 4x_9 + 2x_{10} &\leq 91.48023896 \\ -2x_1 - 5x_2 + 2x_3 - 5x_4 + 2x_5 - 4x_6 + 2x_7 + 4x_8 + 5x_9 - 1x_{10} &\leq -76.54399847 \\ -3x_1 - 4x_2 + 3x_3 + 1x_5 + 3x_6 - 4x_7 + 2x_8 + 4x_9 + 2x_{10} &\leq -4.11584140 \\ -5x_1 + 4x_3 - 1x_4 + 1x_5 - 4x_6 + 5x_7 - 5x_8 - 4x_9 - 3x_{10} &\leq -75.65829584 \\ +4x_1 + 4x_4 - 3x_5 - 2x_6 + 4x_7 + 3x_8 + 5x_9 - 1x_{10} &\leq 34.47959376 \\ +3x_1 + 4x_2 - 3x_3 + 4x_5 - 2x_6 - 2x_7 - 3x_8 + 2x_{10} &\leq 117.07530895 \\ -2x_1 - 3x_2 - 1x_3 + 4x_4 + 1x_5 + 2x_6 + 5x_7 - 1x_8 - 2x_9 - 1x_{10} &\leq -6.86687370 \\ +1x_1 - 1x_2 + 2x_3 - 5x_4 + 4x_5 + 2x_7 + 2x_8 - 1x_9 - 5x_{10} &\leq 1.38353703 \\ -1x_1 + 1x_2 - 5x_4 + 4x_5 - 1x_6 - 4x_7 + 1x_8 + 3x_{10} &\leq 47.38086396 \\ -1x_1 - 2x_2 - 2x_3 - 2x_4 - 1x_5 - 3x_6 - 2x_7 - 1x_9 + 1x_{10} &\leq -116.04135609 \end{aligned}$$

#### Student Number: 27 Student ID: 17217873

Minimise: 
$$z = -5x_1 - 1x_2 - 2x_3 + 6x_4 + 2x_5 + 4x_6 + 3x_7 + 3x_8 - 3x_9 + 5x_{10}$$

Constraint Inequalities:

$$-1x_1 + 3x_2 - 1x_3 - 1x_4 + 2x_6 + 4x_7 - 4x_8 - 2x_9 + 3x_{10} \le 24.33611144$$

$$-5x_1 + 4x_2 - 4x_3 + 1x_4 + 4x_5 - 4x_6 + 4x_7 + 4x_8 - 5x_9 - 2x_{10} \le -108.14645702$$

$$+1x_1 + 3x_2 - 4x_3 + 4x_4 + 4x_5 - 1x_6 - 2x_7 + 3x_9 - 4x_{10} \le -82.19374968$$

$$-4x_1 + 4x_2 - 4x_3 + 1x_5 + 3x_7 + 2x_8 - 1x_{10} \le -19.73324163$$

$$+1x_1 + 5x_2 + 4x_4 + 2x_5 + 4x_6 - 3x_7 + 3x_8 - 1x_{10} \le 83.07165236$$

$$+1x_1 + 2x_2 - 2x_3 + 1x_4 - 5x_5 + 1x_6 + 1x_7 + 4x_8 + 1x_9 - 2x_{10} \le 21.20547348$$

$$+2x_1 + 1x_2 + 3x_3 - 2x_4 + 4x_5 + 5x_6 - 1x_7 - 1x_8 - 1x_9 - 2x_{10} \le 96.43642041$$

$$+3x_1 + 4x_2 + 1x_4 + 3x_5 - 4x_7 - 3x_8 - 1x_9 + 2x_{10} \le -37.44269971$$

$$+3x_1 - 1x_2 + 1x_3 - 4x_5 + 3x_6 + 1x_7 + 2x_8 + 2x_9 - 4x_{10} \le 72.32502503$$

$$-5x_1 - 4x_2 - 3x_3 - 2x_4 - 2x_5 - 2x_6 + 2x_7 + 1x_8 + 4x_9 + 3x_{10} \le -9.19440883$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 28 Student ID: 17219043

Minimise: 
$$z = -6x_1 - 5x_3 + 1x_4 + 3x_5 - 3x_6 - 5x_7 + 2x_8 - 5x_9 + 4x_{10}$$

$$-1x_1 + 2x_2 + 4x_3 + 3x_4 + 5x_5 + 3x_6 + 3x_7 + 2x_8 - 1x_9 - 3x_{10} \le 194.43006773$$

$$-4x_1 - 1x_2 - 3x_3 - 2x_4 + 3x_5 + 4x_6 + 3x_7 + 1x_9 - 4x_{10} \le 5.04978622$$

$$+1x_1 + 2x_2 + 3x_3 + 2x_4 + 5x_5 - 3x_6 - 2x_7 + 4x_8 + 1x_9 - 3x_{10} \le 61.57061720$$

$$+3x_1 + 3x_2 + 3x_3 - 4x_4 + 4x_5 + 1x_6 - 3x_7 + 1x_8 + 1x_9 + 4x_{10} \le 183.81495983$$

$$+5x_1 - 1x_2 + 4x_3 + 3x_4 - 3x_5 - 3x_6 - 4x_7 + 3x_9 + 3x_{10} \le 45.21748639$$

$$+3x_1 - 3x_2 - 1x_3 + 4x_4 + 3x_5 - 1x_6 - 1x_7 + 3x_8 + 1x_9 - 2x_{10} \le 70.37377362$$

$$+4x_1 + 3x_2 + 3x_3 + 2x_4 - 4x_5 + 1x_6 - 4x_7 + 5x_8 + 1x_9 + 5x_{10} \le 110.97873688$$

$$+5x_1 + 2x_2 + 5x_3 + 4x_4 - 3x_5 + 1x_6 + 1x_7 - 4x_8 + 2x_9 - 4x_{10} \le 110.01848423$$

$$-2x_2 + 3x_3 + 2x_4 - 2x_5 + 1x_6 + 3x_7 + 1x_8 - 4x_9 - 4x_{10} \le -58.17455664$$

$$-1x_1 + 4x_2 - 4x_3 - 2x_4 + 4x_5 + 4x_6 - 3x_7 - 2x_8 - 3x_9 - 2x_{10} \le -5.55898726$$

$$x_i \geq 0, i = 1, \ldots, n.$$

#### Student Number: 29 Student ID: 17220467

Minimise: 
$$z = +4x_1 - 2x_2 - 1x_3 + 4x_4 + 1x_5 - 5x_6 + 6x_7 - 2x_8 - 2x_9 - 3x_{10}$$

Constraint Inequalities:

$$\begin{array}{c} -1x_1 + 3x_2 + 2x_3 - 1x_4 + 1x_5 + 4x_6 + 4x_7 + 2x_8 - 2x_9 - 1x_{10} \leq 135.41981845 \\ -2x_1 + 3x_2 + 4x_3 - 3x_4 + 5x_5 + 3x_6 - 3x_7 - 4x_8 - 2x_9 + 3x_{10} \leq -75.74597397 \\ -2x_1 + 3x_2 - 5x_3 - 5x_4 + 2x_6 + 2x_8 + 2x_9 + 2x_{10} \leq -32.66870150 \\ +1x_1 + 1x_2 + 4x_3 + 4x_4 - 1x_5 - 3x_6 - 1x_8 + 3x_9 - 2x_{10} \leq 105.25902667 \\ -1x_1 - 2x_2 + 1x_3 - 2x_4 - 1x_5 - 3x_6 - 2x_7 + 4x_8 + 1x_9 - 2x_{10} \leq -10.19290758 \\ +3x_1 + 5x_2 - 4x_3 + 3x_4 + 4x_5 - 2x_6 - 4x_7 - 1x_8 + 2x_9 + 1x_{10} \leq -10.91118489 \\ -3x_1 + 3x_2 + 1x_3 - 1x_4 + 4x_5 + 5x_6 + 2x_7 - 5x_8 + 3x_9 \leq -5.05412135 \\ -2x_1 - 5x_2 - 4x_3 - 5x_4 - 4x_5 + 3x_6 + 2x_7 + 3x_8 + 4x_9 + 3x_{10} \leq -12.25343192 \\ +4x_1 + 1x_2 - 5x_3 - 3x_4 - 3x_5 - 3x_6 - 3x_7 + 5x_8 - 5x_9 + 1x_{10} \leq -51.09039618 \\ -2x_1 - 1x_2 + 3x_3 - 2x_4 + 2x_5 - 3x_6 + 3x_7 - 2x_8 + 1x_9 \leq 19.15040102 \end{array}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 30 Student ID: 17222931

Minimise: 
$$z = +4x_1 - 3x_2 - 5x_3 - 6x_4 - 5x_5 - 4x_6 + 1x_7 + 3x_8 + 1x_9$$

Constraint Inequalities:

$$+2x_1 - 1x_2 - 3x_3 + 4x_4 + 2x_5 + 4x_6 + 2x_7 - 3x_9 \le 80.96259410$$

$$+1x_1 - 4x_2 + 4x_3 - 2x_4 - 2x_5 - 3x_6 - 1x_7 + 4x_9 - 1x_{10} \le -75.93511959$$

$$-5x_1 - 3x_2 - 4x_3 - 2x_4 - 2x_6 + 1x_7 - 3x_8 - 3x_9 + 4x_{10} \le -153.35745781$$

$$+1x_1 - 1x_2 - 2x_3 - 3x_4 - 4x_5 + 4x_7 + 1x_8 + 4x_9 + 1x_{10} \le -138.50199735$$

$$+2x_1 - 4x_2 + 3x_3 - 4x_5 + 2x_6 + 3x_7 - 2x_8 + 5x_9 - 4x_{10} \le -106.22651358$$

$$+3x_1 + 1x_2 - 4x_3 + 3x_4 + 2x_5 - 2x_7 - 2x_8 - 1x_9 + 5x_{10} \le 129.41393233$$

$$-4x_1 - 3x_2 - 1x_3 - 2x_4 + 2x_5 - 4x_6 - 2x_9 \le -111.64695441$$

$$-3x_1 - 3x_2 + 4x_3 - 2x_4 + 2x_5 + 3x_6 + 4x_7 + 3x_8 + 1x_9 + 1x_{10} \le 41.49928473$$

$$-2x_4 - 4x_5 - 1x_6 + 2x_8 - 2x_9 - 2x_{10} \le -142.48180826$$

$$-5x_1 + 4x_2 + 3x_3 + 2x_4 - 1x_5 - 4x_6 - 3x_7 + 2x_8 + 1x_9 - 3x_{10} \le 27.55757256$$

#### Student Number: 31 Student ID: 17223113

Minimise: 
$$z = -6x_1 + 5x_2 + 1x_3 - 5x_4 - 1x_5 + 1x_6 - 7x_7 + 5x_8 + 6x_9 - 6x_{10}$$

Constraint Inequalities:

$$-2x_1 + 4x_2 - 3x_3 - 3x_4 - 3x_5 - 3x_6 + 4x_8 - 4x_9 + 4x_{10} \le -92.36819982$$

$$+1x_1 + 3x_2 - 1x_4 - 4x_5 + 5x_6 - 1x_7 - 2x_8 - 3x_{10} \le 14.49219639$$

$$-3x_1 + 2x_2 - 1x_3 - 4x_4 - 1x_5 - 3x_6 + 3x_7 - 5x_8 - 4x_9 - 2x_{10} \le -220.87387639$$

$$-1x_1 - 3x_2 - 1x_4 - 2x_5 - 1x_6 - 4x_7 + 1x_8 - 2x_9 - 1x_{10} \le -74.92578744$$

$$+5x_1 + 4x_4 - 2x_5 + 2x_6 - 4x_9 + 1x_{10} \le 73.05050460$$

$$-2x_2 + 3x_3 + 1x_4 - 1x_5 - 3x_6 - 1x_7 + 2x_8 - 5x_9 - 1x_{10} \le -7.26901394$$

$$-5x_1 - 2x_3 + 1x_4 - 4x_5 + 4x_6 - 5x_8 - 2x_9 - 3x_{10} \le -155.21521588$$

$$+1x_1 + 2x_3 - 2x_4 + 3x_5 + 2x_6 - 2x_7 + 5x_8 - 2x_9 - 1x_{10} \le 150.98665382$$

$$+4x_1 - 1x_2 - 3x_3 + 3x_4 + 3x_5 - 2x_6 + 4x_7 + 1x_8 + 2x_9 + 5x_{10} \le 64.78450934$$

$$-3x_1 - 2x_3 - 2x_4 - 5x_7 + 4x_8 + 2x_9 - 3x_{10} \le -50.66463207$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 32 Student ID: 17223245

Minimise: 
$$z = -1x_1 + 1x_2 + 5x_3 - 2x_4 - 2x_5 - 1x_6 - 6x_7 + 3x_9 - 7x_{10}$$

Constraint Inequalities:

$$-1x_1 + 3x_2 - 1x_3 - 4x_4 - 1x_5 + 3x_6 + 1x_7 - 1x_8 + 5x_9 + 4x_{10} \le 125.06528612 \\ +3x_1 - 4x_2 - 2x_4 - 3x_5 + 4x_6 + 3x_7 + 4x_8 + 3x_9 - 5x_{10} \le -33.72593646 \\ -3x_1 + 3x_2 + 5x_3 - 1x_4 - 4x_5 + 4x_6 + 5x_7 + 1x_8 - 1x_{10} \le 61.51159679 \\ +4x_1 + 3x_2 + 3x_3 + 5x_5 + 2x_7 - 1x_8 + 2x_9 - 4x_{10} \le 22.67057184 \\ -1x_1 - 1x_2 - 4x_3 + 5x_4 + 4x_5 - 3x_6 - 1x_7 + 2x_8 - 2x_9 - 1x_{10} \le 1.92298819 \\ +5x_1 + 1x_2 + 4x_3 + 3x_5 + 4x_6 + 4x_7 + 4x_8 + 4x_9 + 1x_{10} \le 187.33336905 \\ +4x_2 + 2x_3 + 3x_4 - 2x_5 + 4x_7 + 4x_8 - 4x_9 + 2x_{10} \le 94.59270402 \\ -3x_1 - 1x_2 + 1x_3 + 5x_4 - 4x_5 - 4x_6 - 5x_7 - 4x_8 - 2x_9 - 2x_{10} \le -62.31432982 \\ +4x_1 + 2x_2 + 4x_3 - 3x_4 + 2x_5 - 2x_6 - 1x_7 + 3x_8 - 1x_9 + 4x_{10} \le 35.61847226 \\ +3x_1 + 4x_2 - 3x_3 + 2x_4 + 2x_5 - 1x_6 + 3x_7 + 4x_8 + 3x_9 \le 145.82917490$$

#### Student Number: 33 Student ID: 17223911

Minimise: 
$$z = -1x_1 - 6x_2 + 3x_3 + 1x_5 + 6x_6 - 7x_7 + 2x_8 + 3x_{10}$$

Constraint Inequalities:

$$+3x_{1} - 4x_{2} - 3x_{3} + 3x_{4} + 5x_{5} - 3x_{6} + 1x_{7} + 4x_{8} + 2x_{9} - 5x_{10} \leq 110.84217391$$

$$+4x_{1} - 4x_{2} + 1x_{3} + 5x_{4} + 3x_{5} + 1x_{6} + 1x_{8} + 2x_{9} - 1x_{10} \leq 150.33321856$$

$$+3x_{1} + 4x_{2} - 2x_{3} + 1x_{4} - 2x_{5} + 4x_{6} + 2x_{7} + 4x_{8} - 3x_{9} - 2x_{10} \leq 120.84575992$$

$$+3x_{2} + 4x_{3} - 2x_{4} + 3x_{5} - 2x_{6} - 3x_{7} + 2x_{8} + 5x_{9} + 1x_{10} \leq 119.09663604$$

$$+4x_{1} - 1x_{2} - 4x_{3} - 3x_{4} + 5x_{5} - 2x_{7} + 1x_{8} - 3x_{9} + 3x_{10} \leq 29.96081158$$

$$+4x_{1} - 2x_{3} - 4x_{4} - 5x_{6} - 2x_{7} - 1x_{8} + 4x_{9} - 1x_{10} \leq -17.33274786$$

$$-2x_{1} + 5x_{3} - 4x_{4} + 4x_{5} - 4x_{6} - 1x_{7} + 4x_{8} + 2x_{9} - 1x_{10} \leq 71.60991244$$

$$-3x_{1} - 2x_{2} - 4x_{3} + 4x_{4} + 5x_{6} + 4x_{8} - 1x_{9} - 1x_{10} \leq -1.23146019$$

$$+1x_{1} - 4x_{2} + 1x_{3} + 1x_{4} + 4x_{5} + 2x_{6} - 2x_{7} + 5x_{8} + 2x_{9} - 1x_{10} \leq 119.60292006$$

$$-5x_{1} + 2x_{2} + 1x_{3} - 4x_{4} - 5x_{6} + 3x_{7} + 1x_{8} + 2x_{9} \leq -31.22885168$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 34 Student ID: 17224063

Minimise: 
$$z = +5x_1 + 1x_2 - 1x_3 - 7x_4 + 4x_5 - 1x_6 + 5x_7 - 1x_8 - 6x_9 - 2x_{10}$$

Constraint Inequalities:

$$-2x_1 + 1x_2 + 2x_4 + 4x_5 + 1x_6 + 4x_7 - 3x_8 - 4x_9 - 1x_{10} \le 98.19018641 + 5x_1 + 4x_2 + 3x_4 + 3x_5 - 2x_6 + 4x_7 - 5x_8 + 2x_9 - 1x_{10} \le 187.79350530$$

$$-2x_1 + 2x_2 + 3x_3 - 4x_4 + 4x_5 + 4x_6 + 4x_7 - 4x_8 - 3x_9 + 1x_{10} \le 97.40410457 - 1x_1 + 3x_2 - 2x_3 + 2x_4 - 1x_5 - 3x_6 - 3x_7 + 3x_8 + 1x_9 \le -16.45700630$$

$$+1x_1 - 5x_2 + 3x_3 + 1x_4 - 2x_5 + 5x_6 - 4x_7 + 1x_8 - 2x_9 - 5x_{10} \le -87.73298738 + 2x_1 - 2x_2 - 3x_3 + 1x_4 - 3x_5 + 2x_6 + 2x_7 - 5x_8 + 3x_9 \le -42.54984002 + 4x_1 + 2x_2 + 3x_4 - 2x_5 - 4x_6 + 5x_7 - 1x_8 + 3x_9 - 3x_{10} \le 60.70740517 + 5x_1 + 5x_2 - 1x_3 + 4x_4 - 4x_5 + 2x_6 - 4x_7 + 3x_9 + 1x_{10} \le 86.08601406 - 1x_1 - 3x_2 + 3x_3 + 1x_4 + 3x_5 - 1x_6 + 5x_7 - 2x_{10} \le 90.18548435 + 2x_1 - 4x_2 - 3x_3 - 4x_4 + 3x_5 + 2x_6 + 4x_7 - 4x_8 + 4x_9 + 2x_{10} \le 12.72808425$$

#### Student Number: 35 Student ID: 17224551

Minimise: 
$$z = -6x_1 + 2x_2 - 2x_3 - 2x_4 + 4x_5 - 3x_6 - 2x_7 - 5x_8 + 2x_9 + 3x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +5x_1 + 2x_2 - 2x_3 - 2x_4 + 4x_5 + 3x_6 + 4x_7 - 1x_8 - 3x_9 + 3x_{10} &\leq 211.00467277 \\ -2x_1 + 4x_2 - 3x_3 + 4x_4 - 1x_5 - 1x_7 + 3x_8 - 4x_9 + 2x_{10} &\leq -30.62122584 \\ +5x_1 - 1x_2 - 3x_3 - 5x_4 - 4x_5 + 4x_6 + 1x_7 - 2x_9 - 3x_{10} &\leq -63.80896522 \\ -4x_3 + 1x_4 - 1x_5 + 5x_6 - 2x_8 + 3x_9 &\leq -0.83947141 \\ -5x_1 + 1x_2 + 2x_3 + 1x_4 + 3x_5 - 1x_6 + 4x_7 - 2x_8 - 4x_9 + 3x_{10} &\leq -15.65548915 \\ -4x_1 - 1x_2 - 4x_3 + 4x_4 + 5x_6 - 2x_7 + 5x_8 + 3x_9 - 2x_{10} &\leq 12.64662327 \\ -3x_2 + 3x_3 - 4x_4 + 1x_6 - 4x_7 + 1x_8 - 4x_9 + 1x_{10} &\leq -68.01427553 \\ -1x_1 - 5x_2 + 1x_3 - 3x_4 + 1x_5 - 5x_6 + 4x_7 + 4x_8 + 3x_9 - 3x_{10} &\leq -18.47405981 \\ +4x_1 - 2x_2 + 3x_3 - 4x_4 + 4x_5 + 1x_6 + 1x_7 - 1x_8 - 3x_9 - 4x_{10} &\leq 60.36451360 \\ +1x_1 + 3x_2 + 2x_3 + 1x_4 + 4x_5 + 2x_6 - 2x_7 - 4x_8 + 2x_9 + 3x_{10} &\leq 174.81059372 \end{aligned}$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 36 Student ID: 17224985

Minimise: 
$$z = -2x_1 + 2x_2 + 2x_3 + 5x_4 - 3x_5 + 4x_6 - 2x_7 - 4x_8 - 3x_9 + 5x_{10}$$

$$\begin{aligned} +1x_1 + 3x_2 + 3x_3 - 2x_4 - 2x_5 + 1x_6 + 1x_7 - 2x_8 + 3x_9 - 3x_{10} &\leq 52.72538375 \\ +2x_1 + 5x_2 + 2x_4 + 3x_5 + 5x_6 - 2x_7 + 1x_8 - 3x_9 + 4x_{10} &\leq 246.68642268 \\ +3x_1 - 2x_2 + 3x_3 - 1x_5 + 5x_6 - 2x_7 + 1x_8 + 1x_9 - 5x_{10} &\leq 64.94757348 \\ -1x_1 + 2x_2 - 4x_3 - 5x_4 + 2x_5 + 4x_7 - 4x_8 + 2x_9 - 2x_{10} &\leq -77.05623437 \\ -1x_1 + 3x_2 + 5x_3 + 3x_4 - 2x_5 - 3x_6 - 4x_7 - 1x_8 - 5x_9 - 2x_{10} &\leq -90.96818433 \\ +4x_2 - 2x_3 + 3x_4 + 4x_5 + 5x_6 - 1x_7 + 1x_8 + 1x_9 + 2x_{10} &\leq 253.90947748 \\ -3x_1 - 2x_2 + 3x_3 + 2x_4 - 5x_5 - 1x_6 - 2x_7 - 3x_8 + 3x_9 - 5x_{10} &\leq -101.23856311 \\ -3x_2 - 1x_3 + 1x_4 + 5x_6 + 1x_7 - 3x_8 + 4x_9 + 1x_{10} &\leq 126.27402653 \\ -4x_1 + 1x_2 + 1x_3 + 4x_4 - 3x_5 + 4x_6 + 1x_7 - 3x_8 - 5x_9 + 2x_{10} &\leq 21.60462153 \\ -1x_1 - 4x_2 + 4x_3 + 3x_4 + 4x_6 + 5x_7 - 1x_8 - 1x_{10} &\leq 39.80289367 \end{aligned}$$

$$x_i \geq 0, i = 1, \ldots, n.$$

#### Student Number: 37 Student ID: 17226058

Minimise: 
$$z = -1x_1 + 3x_2 + 5x_3 + 2x_4 - 1x_5 - 4x_6 - 2x_7 - 5x_8 + 2x_9 - 2x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +2x_2 + 5x_3 + 4x_4 + 3x_5 + 4x_6 + 5x_7 + 3x_8 - 3x_9 + 5x_{10} &\leq 307.60308936 \\ +2x_1 + 2x_2 + 1x_3 + 5x_4 - 3x_5 + 4x_6 - 1x_7 - 1x_8 - 1x_9 - 3x_{10} &\leq 74.85209420 \\ +4x_1 - 4x_2 - 3x_3 - 4x_4 - 3x_5 - 3x_6 + 3x_7 + 2x_8 - 3x_9 + 3x_{10} &\leq -32.08862638 \\ & -3x_4 + 3x_5 - 4x_7 + 1x_8 - 3x_9 + 4x_{10} &\leq 20.34183075 \\ +3x_1 - 4x_2 - 1x_3 + 3x_4 + 5x_5 - 4x_6 - 4x_7 - 4x_8 - 5x_9 + 2x_{10} &\leq -131.96874814 \\ & -4x_1 + 2x_2 - 5x_3 + 2x_4 - 5x_6 - 4x_7 - 5x_8 - 4x_9 - 3x_{10} &\leq -271.62374585 \\ & +4x_1 - 2x_2 - 1x_4 + 4x_5 - 4x_6 + 1x_7 + 1x_8 + 1x_9 - 1x_{10} &\leq -3.35037609 \\ & -3x_2 + 2x_3 + 4x_4 + 2x_5 - 3x_6 + 1x_7 + 4x_8 + 1x_9 - 2x_{10} &\leq 28.66227818 \\ & +3x_2 + 4x_3 - 3x_4 - 4x_5 - 1x_6 - 1x_7 + 4x_8 + 2x_9 + 3x_{10} &\leq 134.16833172 \\ & +2x_1 + 3x_2 - 5x_3 + 4x_4 - 2x_5 + 1x_6 + 2x_7 - 1x_8 - 2x_9 + 5x_{10} &\leq 83.78186497 \end{aligned}$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 38 Student ID: 17227445

Minimise: 
$$z = -5x_1 - 4x_2 + 3x_4 + 1x_5 - 6x_6 + 1x_7 - 4x_8 - 5x_9 - 3x_{10}$$

$$+1x_2 + 2x_3 + 4x_5 - 1x_6 - 1x_7 - 4x_{10} \le 59.54444266$$

$$-2x_1 - 4x_3 - 1x_5 + 1x_6 + 1x_7 + 5x_8 + 3x_9 + 2x_{10} \le -17.20756604$$

$$+5x_1 + 1x_2 - 2x_3 - 2x_4 + 3x_5 + 2x_7 - 1x_8 + 1x_9 \le 77.44782397$$

$$-3x_1 + 4x_2 - 2x_3 - 4x_4 + 4x_5 + 2x_6 + 1x_7 - 1x_8 + 3x_9 - 3x_{10} \le -17.88252731$$

$$-4x_1 - 1x_2 - 2x_5 + 3x_6 - 3x_7 + 4x_8 - 3x_9 - 5x_{10} \le -108.37147462$$

$$-4x_2 - 3x_3 + 2x_4 + 3x_5 - 3x_6 + 1x_7 + 2x_8 - 4x_9 - 3x_{10} \le -12.30185255$$

$$-3x_1 - 1x_2 - 3x_3 - 1x_4 + 3x_5 + 4x_6 - 4x_7 - 1x_8 - 4x_9 - 2x_{10} \le -64.93475741$$

$$-1x_1 + 5x_2 + 3x_3 + 1x_4 + 4x_5 - 4x_6 + 5x_7 + 5x_8 + 3x_9 - 5x_{10} \le 140.79152498$$

$$+4x_1 - 1x_2 - 4x_3 + 2x_4 - 4x_5 - 4x_6 - 2x_7 - 5x_9 - 1x_{10} \le -124.45372336$$

$$-1x_1 + 3x_2 + 4x_3 + 1x_4 - 1x_5 + 5x_6 + 4x_7 + 3x_8 + 2x_9 - 1x_{10} \le 147.15197812$$

$$x_i \ge 0, i = 1, \dots, n.$$

#### Student Number: 39 Student ID: 17228581

Minimise: 
$$z = +4x_1 - 1x_2 + 4x_3 + 1x_4 - 3x_6 + 6x_7 - 6x_8 + 2x_9 - 1x_{10}$$

Constraint Inequalities:

$$-4x_1 + 3x_2 - 3x_4 - 5x_5 - 1x_6 - 4x_7 - 4x_8 - 3x_9 \le -185.13225203$$

$$+1x_1 - 2x_2 - 3x_3 + 3x_4 - 1x_5 - 3x_6 + 1x_7 - 3x_8 + 1x_9 + 1x_{10} \le -41.15449022$$

$$+2x_1 + 1x_2 + 2x_3 + 3x_4 - 5x_6 + 2x_7 - 4x_8 - 4x_9 - 2x_{10} \le -112.31698749$$

$$-2x_1 - 3x_2 - 5x_3 - 4x_5 + 4x_6 - 3x_7 + 3x_8 - 4x_9 - 4x_{10} \le -185.04999407$$

$$-2x_1 + 2x_2 + 3x_3 + 2x_4 - 4x_5 - 3x_6 - 1x_7 + 3x_8 - 5x_9 + 2x_{10} \le -121.46538313$$

$$+3x_1 + 1x_2 + 5x_3 + 4x_4 + 3x_5 + 4x_7 - 2x_8 + 4x_9 + 1x_{10} \le 226.78171546$$

$$-4x_1 - 4x_2 - 3x_3 - 1x_4 + 3x_5 + 1x_6 - 2x_7 + 1x_{10} \le -95.72880862$$

$$+2x_1 - 4x_2 + 1x_3 - 2x_4 + 5x_5 + 1x_6 + 4x_7 + 2x_8 - 3x_9 - 4x_{10} \le -25.19975727$$

$$-2x_1 - 3x_2 - 3x_3 + 1x_4 + 2x_5 + 1x_6 - 3x_7 - 2x_8 + 4x_9 - 1x_{10} \le -20.63725085$$

$$-3x_1 - 1x_2 + 2x_3 - 4x_4 - 1x_5 + 2x_6 - 4x_7 + 3x_8 + 3x_9 - 5x_{10} \le -54.38924056$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 40 Student ID: 17231086

Minimise: 
$$z = -1x_1 + 2x_3 - 5x_4 - 4x_5 - 2x_6 - 3x_7 + 3x_8 - 2x_9$$

$$+4x_1 + 3x_2 - 3x_3 + 5x_4 - 2x_5 + 4x_6 - 3x_7 - 1x_9 - 5x_{10} \le 14.36255127$$

$$-1x_2 - 2x_4 - 3x_5 + 5x_6 + 1x_7 + 2x_9 - 1x_{10} \le -67.82861825$$

$$+2x_1 + 3x_2 + 2x_3 - 3x_4 - 5x_5 + 2x_7 - 3x_8 - 4x_9 - 3x_{10} \le -120.77965221$$

$$-2x_1 + 4x_2 - 5x_3 + 2x_4 - 2x_5 + 2x_6 + 4x_7 - 2x_8 + 2x_9 + 3x_{10} \le 62.18605016$$

$$-2x_1 + 3x_2 + 3x_3 - 4x_4 + 1x_5 + 3x_6 - 3x_8 + 2x_9 \le -45.66405002$$

$$-2x_1 - 1x_2 - 4x_3 + 1x_4 - 4x_5 - 1x_6 - 3x_7 + 5x_8 + 1x_9 + 2x_{10} \le -62.63469281$$

$$+1x_1 + 5x_2 + 4x_3 - 1x_4 + 2x_5 - 2x_6 + 4x_7 + 4x_8 + 2x_9 + 3x_{10} \le 212.87407348$$

$$+2x_1 - 1x_2 - 3x_3 - 4x_4 + 5x_5 + 3x_6 + 3x_8 + 5x_9 - 4x_{10} \le 58.42960343$$

$$+4x_1 + 4x_2 + 1x_3 - 1x_5 + 1x_6 - 2x_7 + 5x_8 + 4x_{10} \le 107.42287089$$

$$-4x_1 + 2x_2 - 5x_3 + 1x_4 + 1x_5 + 2x_6 - 3x_7 - 2x_8 + 5x_9 + 4x_{10} \le -15.36895764$$

$$x_i \geq 0, i = 1, \ldots, n.$$

#### Student Number: 41 Student ID: 17232007

Minimise: 
$$z = -7x_1 + 1x_2 - 1x_3 - 7x_4 + 3x_5 - 4x_6 - 1x_8 + 1x_9 + 6x_{10}$$

Constraint Inequalities:

$$+3x_1 + 5x_2 - 1x_3 + 5x_4 - 2x_6 + 3x_7 - 1x_8 - 2x_{10} \le 141.37817279 \\ +4x_1 + 1x_3 - 1x_4 - 4x_5 + 2x_6 + 4x_7 - 1x_8 - 2x_9 + 1x_{10} \le 88.74077338 \\ -4x_1 - 2x_2 - 1x_3 - 5x_6 + 4x_7 + 1x_9 - 2x_{10} \le -127.53151896 \\ +5x_1 - 2x_2 + 4x_3 + 2x_4 + 1x_5 + 5x_6 + 4x_8 - 2x_9 - 4x_{10} \le 184.99406627 \\ -1x_1 - 4x_2 - 4x_3 + 2x_4 + 1x_5 - 1x_7 + 1x_8 - 5x_9 - 1x_{10} \le -92.41798554 \\ -3x_1 + 1x_2 - 4x_3 + 4x_4 - 4x_5 - 2x_6 - 4x_7 - 3x_8 + 3x_9 - 4x_{10} \le -264.40356867 \\ +4x_1 + 1x_2 + 2x_3 + 4x_4 + 2x_5 - 3x_6 - 4x_7 + 5x_8 + 2x_9 + 4x_{10} \le 255.04837265 \\ +3x_1 - 1x_2 - 4x_4 + 3x_5 + 3x_6 + 1x_7 + 1x_8 - 4x_9 - 2x_{10} \le 48.58775969 \\ +4x_1 + 1x_2 - 1x_3 - 5x_4 + 2x_5 + 2x_6 - 4x_7 - 2x_8 + 1x_9 - 2x_{10} \le -55.01483416 \\ -1x_1 + 3x_2 + 1x_3 - 3x_4 - 1x_5 - 3x_6 - 2x_7 - 1x_8 - 4x_9 + 1x_{10} \le -98.79559188$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 42 Student ID: 17232422

Minimise: 
$$z = -2x_1 - 4x_2 - 3x_3 - 2x_7 + 2x_8 - 1x_9 - 1x_{10}$$

Constraint Inequalities:

$$+5x_1 - 3x_3 + 5x_4 + 2x_5 + 1x_6 - 5x_7 - 3x_8 - 3x_{10} \le 123.01932382$$

$$-1x_1 + 1x_2 - 1x_3 + 4x_4 - 3x_6 + 1x_7 - 2x_8 - 4x_9 \le -93.41373345$$

$$-1x_1 - 2x_2 + 2x_3 + 1x_4 + 2x_5 + 5x_6 + 4x_7 + 2x_8 - 1x_9 + 4x_{10} \le 148.61136912$$

$$-4x_1 + 4x_2 + 3x_3 + 1x_4 + 4x_5 - 2x_6 + 2x_7 - 2x_8 + 1x_9 + 5x_{10} \le 81.74763184$$

$$-3x_1 + 2x_2 + 4x_3 + 4x_4 - 3x_5 + 3x_6 - 3x_7 + 4x_8 - 5x_9 + 2x_{10} \le 89.27689637$$

$$-3x_2 - 1x_3 + 3x_5 + 1x_7 + 1x_8 + 3x_{10} \le 3.38608578$$

$$-2x_1 + 1x_2 - 4x_3 + 1x_4 - 1x_5 + 5x_6 + 1x_7 + 5x_9 + 3x_{10} \le 97.91533467$$

$$+4x_1 + 5x_2 - 2x_3 + 2x_4 + 3x_5 + 4x_6 + 1x_8 - 2x_{10} \le 307.24233607$$

$$-3x_2 - 4x_3 + 1x_4 - 3x_5 + 3x_6 + 4x_8 - 4x_9 + 5x_{10} \le -86.11071106$$

$$-4x_1 - 1x_2 - 4x_3 + 5x_4 + 2x_5 + 4x_6 + 4x_7 - 3x_8 + 3x_9 + 3x_{10} \le 57.01699224$$

#### Student Number: 43 Student ID: 17232511

Minimise: 
$$z = +3x_2 - 5x_3 + 2x_4 - 4x_5 - 5x_6 + 3x_7 - 1x_8 + 2x_{10}$$

Constraint Inequalities:

$$-3x_1 - 3x_2 + 1x_3 + 4x_4 + 4x_5 - 1x_8 - 3x_9 + 2x_{10} \le 49.28370536$$

$$-3x_2 + 5x_3 - 3x_4 + 2x_5 + 3x_7 - 1x_8 + 3x_{10} \le 61.06758132$$

$$+4x_1 - 4x_2 + 1x_3 - 4x_4 + 4x_5 - 4x_7 + 1x_8 - 3x_9 - 2x_{10} \le 18.12318263$$

$$-2x_1 + 1x_2 + 2x_3 + 4x_4 + 4x_5 + 3x_6 + 1x_8 - 2x_9 + 3x_{10} \le 150.46300668$$

$$-2x_1 + 1x_2 + 4x_3 - 3x_4 - 2x_5 + 2x_6 + 2x_7 - 1x_8 - 4x_9 + 1x_{10} \le -70.75100752$$

$$+2x_1 + 4x_2 + 4x_3 - 5x_4 - 2x_5 - 2x_6 + 5x_7 - 1x_8 + 4x_{10} \le 66.38385322$$

$$-3x_1 + 3x_3 - 4x_4 + 2x_5 - 3x_6 + 1x_7 + 2x_9 + 4x_{10} \le 45.02300739$$

$$+4x_1 - 4x_3 + 2x_4 + 2x_5 - 1x_6 - 4x_7 + 4x_8 + 3x_9 - 2x_{10} \le 116.96448368$$

$$+1x_1 - 3x_2 + 2x_3 - 1x_4 - 2x_5 - 1x_6 - 2x_7 + 3x_8 - 4x_9 + 4x_{10} \le 44.38506196$$

$$+3x_1 - 1x_2 + 1x_3 - 3x_4 - 4x_5 + 5x_6 - 4x_7 - 3x_9 + 2x_{10} \le -57.77765463$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 44 Student ID: 17232716

Minimise: 
$$z = -3x_1 - 2x_3 - 2x_5 - 4x_6 - 3x_7 + 1x_9 + 2x_{10}$$

Constraint Inequalities:

$$\begin{array}{c} -4x_1 - 2x_2 + 3x_3 - 5x_4 + 3x_5 + 1x_6 - 3x_7 - 2x_8 + 1x_9 - 1x_{10} \leq -124.98871819 \\ -4x_1 - 4x_2 - 2x_3 + 5x_5 + 2x_6 - 1x_7 + 3x_8 + 1x_9 + 5x_{10} \leq -102.40211534 \\ +2x_2 - 5x_3 - 2x_4 + 2x_5 - 5x_6 - 2x_8 - 1x_9 + 3x_{10} \leq -43.64368721 \\ +4x_1 - 4x_2 - 4x_3 + 5x_4 - 2x_5 + 4x_6 + 4x_7 - 2x_9 + 4x_{10} \leq 112.16752257 \\ -4x_1 + 2x_2 - 2x_3 - 3x_4 + 2x_5 + 5x_6 - 4x_7 \leq -130.92899002 \\ +2x_1 - 2x_2 + 1x_3 + 1x_4 + 1x_5 + 5x_6 + 5x_7 + 4x_8 + 3x_9 + 3x_{10} \leq 164.68155821 \\ +3x_1 + 3x_2 + 2x_3 - 2x_4 + 4x_5 - 1x_6 - 2x_7 - 1x_8 + 1x_9 + 2x_{10} \leq 81.31242977 \\ +2x_1 - 4x_3 - 4x_4 + 5x_5 + 2x_6 - 4x_7 - 3x_8 - 5x_9 + 2x_{10} \leq -52.07420574 \\ +4x_1 - 4x_3 + 2x_6 + 5x_7 - 3x_8 - 4x_{10} \leq 142.03778465 \\ +5x_1 + 1x_2 + 3x_4 + 1x_5 - 4x_6 - 3x_7 - 4x_8 \leq 53.09785427 \end{array}$$

#### Student Number: 45 Student ID: 17234506

Minimise: 
$$z = -4x_1 - 3x_2 - 7x_3 - 7x_4 - 1x_5 + 2x_6 - 4x_7 + 2x_8 + 5x_9 - 4x_{10}$$

Constraint Inequalities:

$$+2x_1 + 3x_2 - 4x_3 - 2x_4 - 4x_5 - 1x_6 - 5x_8 + 1x_9 + 3x_{10} \le -80.52100537$$

$$+4x_1 + 1x_2 + 2x_3 + 2x_4 + 2x_5 + 4x_6 - 2x_7 - 1x_8 + 1x_9 - 2x_{10} \le 188.50788610$$

$$+1x_2 + 5x_4 + 4x_6 + 2x_7 + 4x_8 + 3x_9 + 2x_{10} \le 222.21432097$$

$$-3x_1 + 2x_2 - 2x_3 - 3x_4 - 1x_5 - 2x_6 - 5x_7 + 5x_8 + 1x_9 - 3x_{10} \le -183.44047208$$

$$+2x_1 - 2x_2 + 3x_3 - 4x_4 - 4x_5 - 2x_7 + 1x_8 - 2x_9 - 4x_{10} \le -45.01071008$$

$$-4x_1 + 2x_2 - 1x_3 - 4x_4 - 3x_5 + 2x_6 + 3x_8 - 1x_9 - 2x_{10} \le -67.74726201$$

$$-2x_1 - 4x_2 - 1x_3 - 3x_4 - 5x_5 - 4x_6 + 3x_7 - 4x_8 - 2x_9 - 2x_{10} \le -220.19861086$$

$$+1x_1 + 3x_2 + 2x_3 + 2x_4 - 1x_5 + 5x_6 - 3x_7 + 3x_8 - 1x_9 - 1x_{10} \le 119.74291153$$

$$+3x_1 - 4x_2 + 1x_3 - 4x_4 - 4x_5 + 3x_6 + 4x_7 + 4x_8 + 3x_9 + 1x_{10} \le 202.95918629$$

$$-5x_1 - 2x_2 - 1x_3 + 3x_4 + 4x_5 + 4x_6 + 1x_8 - 2x_9 - 2x_{10} \le -36.40512997$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 46 Student ID: 17235863

Minimise: 
$$z = -5x_1 + 1x_2 + 5x_3 + 1x_4 + 2x_5 + 6x_6 - 3x_8 + 6x_9 - 4x_{10}$$

Constraint Inequalities:

$$-1x_1 - 2x_3 + 1x_5 + 1x_6 - 2x_7 + 4x_8 - 3x_{10} \le 21.27125569 \\ +4x_1 - 3x_2 + 4x_5 + 4x_7 + 5x_8 - 4x_9 + 5x_{10} \le 170.74316117 \\ -5x_1 + 4x_2 + 4x_3 + 1x_4 + 1x_5 + 1x_6 + 1x_7 + 2x_8 + 1x_9 \le 106.24837131 \\ -2x_1 + 2x_2 - 2x_3 - 3x_5 - 1x_6 + 1x_7 - 2x_8 + 5x_9 + 3x_{10} \le -7.99681853 \\ +3x_1 + 1x_2 + 5x_3 - 3x_4 + 2x_5 + 5x_6 + 1x_7 + 5x_8 + 1x_9 - 1x_{10} \le 179.74330563 \\ +1x_1 - 1x_2 - 3x_3 + 2x_4 + 3x_5 + 1x_6 + 2x_7 - 4x_8 + 4x_{10} \le 44.65158777 \\ -3x_1 - 5x_2 + 3x_4 - 3x_5 - 1x_6 + 3x_7 + 5x_8 + 5x_9 + 4x_{10} \le 68.00319836 \\ -3x_1 - 2x_2 + 1x_3 - 2x_4 + 1x_5 + 3x_8 - 4x_9 - 2x_{10} \le -69.81468506 \\ -4x_1 + 4x_2 - 2x_3 - 2x_4 - 1x_5 + 1x_6 + 4x_7 - 3x_8 + 5x_9 + 4x_{10} \le 18.75338704 \\ -5x_1 - 4x_2 - 1x_3 + 4x_4 + 3x_6 + 3x_7 + 4x_8 - 1x_{10} \le 59.71062086$$

#### Student Number: 47 Student ID: 17236444

Minimise: 
$$z = -6x_2 - 7x_3 - 4x_4 + 2x_5 - 3x_6 - 2x_7 - 2x_8 - 1x_9 + 6x_{10}$$

Constraint Inequalities:

$$+1x_1 - 5x_2 + 3x_3 - 1x_4 - 5x_5 + 2x_7 + 4x_8 + 4x_{10} \le 3.22316563 \\ +1x_1 + 2x_2 - 1x_3 - 3x_4 + 1x_5 + 3x_6 - 3x_7 + 4x_8 + 3x_9 \le 12.37107154 \\ -3x_1 + 2x_2 + 4x_3 - 3x_4 - 5x_6 + 1x_7 + 1x_8 - 4x_9 - 2x_{10} \le -100.49917967 \\ +1x_1 - 2x_3 - 5x_4 - 2x_5 - 5x_6 + 5x_7 + 1x_8 - 3x_9 + 3x_{10} \le -7.23071584 \\ +2x_1 + 4x_2 + 3x_3 + 4x_4 - 1x_6 + 1x_7 - 2x_8 - 2x_9 + 1x_{10} \le 75.97350956 \\ -1x_1 + 4x_2 - 1x_3 + 1x_4 + 4x_5 - 4x_6 + 4x_7 + 2x_8 \le 104.42832316 \\ +2x_1 + 1x_2 + 5x_3 + 3x_5 - 3x_6 + 4x_9 + 4x_{10} \le 179.73370216 \\ +1x_1 - 5x_2 + 4x_3 - 4x_5 - 3x_6 - 3x_7 - 5x_8 + 4x_9 + 3x_{10} \le -24.86320498 \\ +2x_1 + 4x_2 + 5x_3 + 5x_4 - 3x_5 + 1x_6 - 1x_7 + 5x_8 - 3x_9 + 3x_{10} \le 25.79257032 \\ -5x_2 - 4x_3 - 5x_4 + 3x_6 + 5x_7 + 5x_8 - 3x_9 - 3x_{10} \le -18.98406534$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 48 Student ID: 17236894

Minimise: 
$$z = -3x_1 + 5x_2 - 4x_3 - 2x_4 + 4x_5 - 6x_6 + 1x_7 - 2x_8 - 1x_9 + 4x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +2x_1 + 3x_2 - 2x_3 - 2x_4 - 4x_5 + 1x_6 + 1x_7 + 5x_8 + 3x_9 + 1x_{10} &\leq 171.27153593 \\ +4x_1 - 4x_2 - 4x_3 - 2x_4 - 1x_5 - 1x_6 - 4x_7 - 1x_{10} &\leq -141.25392849 \\ -1x_2 - 3x_3 - 4x_4 + 1x_5 + 1x_6 - 2x_7 + 2x_{10} &\leq -76.17755129 \\ +3x_1 + 2x_2 + 2x_3 + 3x_4 - 4x_5 + 3x_6 - 3x_7 + 4x_8 + 3x_9 - 4x_{10} &\leq 234.81691455 \\ +4x_1 - 4x_2 + 2x_3 - 2x_4 - 3x_5 + 4x_6 - 2x_7 + 1x_8 - 3x_9 - 2x_{10} &\leq -13.26463093 \\ -2x_1 + 1x_2 + 4x_3 + 4x_4 + 4x_5 + 2x_6 - 1x_7 + 3x_8 - 2x_9 - 3x_{10} &\leq 130.33621602 \\ -1x_1 + 4x_2 + 2x_3 - 3x_4 + 3x_5 + 3x_6 - 2x_7 - 1x_8 - 5x_{10} &\leq -41.28855048 \\ -5x_1 + 2x_2 - 3x_4 + 1x_5 - 4x_7 - 1x_8 + 4x_9 - 2x_{10} &\leq -78.86641864 \\ -3x_1 + 4x_2 - 4x_3 + 3x_4 + 4x_5 + 3x_6 - 3x_7 - 3x_8 + 2x_9 &\leq 33.93753701 \\ +1x_2 + 2x_3 - 2x_4 + 5x_5 + 1x_6 - 4x_7 + 2x_9 + 4x_{10} &\leq 120.62752389 \end{aligned}$$

#### Student Number: 49 Student ID: 17238137

Minimise: 
$$z = +3x_1 + 1x_2 + 5x_3 + 4x_4 + 6x_5 - 4x_6 - 7x_7 - 6x_8 + 1x_9 - 5x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +4x_1 + 3x_2 + 1x_3 - 2x_4 + 2x_5 + 1x_6 + 4x_7 + 1x_8 - 4x_9 - 3x_{10} &\leq 36.77427640 \\ -5x_1 - 1x_2 + 5x_3 + 2x_5 - 5x_6 + 4x_7 + 1x_8 + 2x_9 + 5x_{10} &\leq 221.31500635 \\ +5x_1 - 1x_2 + 4x_3 - 3x_4 - 2x_5 - 4x_6 - 1x_7 + 2x_8 - 2x_{10} &\leq -30.92754610 \\ -4x_1 - 1x_2 - 3x_3 + 2x_4 + 2x_5 + 3x_6 + 5x_7 + 4x_8 &\leq 81.87192255 \\ -2x_1 - 1x_2 + 4x_3 + 2x_4 - 3x_5 - 2x_6 + 2x_7 - 3x_8 + 3x_9 + 3x_{10} &\leq 140.37102199 \\ -2x_1 + 4x_2 - 1x_3 + 3x_4 + 1x_5 + 4x_6 + 4x_7 + 4x_8 + 3x_9 - 5x_{10} &\leq 82.85144774 \\ +4x_2 + 4x_3 - 1x_4 - 3x_5 + 3x_6 - 4x_7 + 5x_8 - 1x_9 - 2x_{10} &\leq -13.24481053 \\ +2x_1 + 5x_2 - 5x_3 + 1x_4 - 4x_5 + 3x_7 - 4x_8 + 4x_9 + 4x_{10} &\leq 73.47902220 \\ &\qquad +2x_1 + 2x_3 - 5x_4 + 4x_6 + 5x_7 + 5x_8 + 3x_9 - 5x_{10} &\leq 26.88342478 \\ -1x_1 - 2x_3 + 3x_4 + 2x_5 + 2x_6 + 1x_7 + 5x_8 - 1x_9 - 4x_{10} &\leq -9.00314444 \end{aligned}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 50 Student ID: 17238854

Minimise: 
$$z = -3x_1 + 6x_2 - 6x_3 - 6x_4 - 3x_5 - 6x_6 - 5x_7 + 3x_8 - 5x_9 - 2x_{10}$$

Constraint Inequalities:

$$-2x_2 + 3x_3 - 1x_4 + 3x_5 + 5x_6 - 5x_7 - 2x_8 + 2x_9 - 4x_{10} \le -38.37150952$$

$$-1x_1 - 1x_2 - 1x_3 + 5x_4 + 2x_5 - 5x_6 - 4x_7 + 1x_8 + 2x_9 - 1x_{10} \le -32.21332201$$

$$-5x_1 + 3x_2 + 3x_3 + 5x_4 - 4x_5 + 3x_6 + 1x_7 + 5x_8 - 5x_9 - 1x_{10} \le -16.56587344$$

$$-3x_1 + 2x_2 - 1x_3 - 5x_4 - 2x_7 + 3x_8 - 2x_9 \le -119.28344143$$

$$-1x_1 + 5x_2 + 1x_3 + 2x_4 + 4x_5 - 3x_6 - 2x_9 + 3x_{10} \le 85.94032069$$

$$-2x_1 + 1x_2 + 1x_3 + 2x_4 + 1x_5 + 4x_6 + 4x_7 + 4x_8 + 3x_9 - 3x_{10} \le 156.57445952$$

$$-4x_1 + 1x_2 - 2x_3 + 5x_4 + 5x_5 + 1x_6 - 3x_7 - 2x_8 + 2x_9 - 4x_{10} \le -13.46567433$$

$$+3x_1 + 1x_2 + 1x_3 - 5x_4 + 4x_5 - 1x_6 + 4x_7 - 3x_8 + 4x_9 + 4x_{10} \le 169.72211912$$

$$+1x_1 + 4x_2 - 3x_3 - 2x_4 + 3x_5 + 2x_6 - 3x_7 + 4x_8 + 3x_9 + 4x_{10} \le 128.73392108$$

$$-1x_1 - 2x_2 - 5x_4 + 2x_5 - 2x_6 - 4x_7 - 4x_8 + 5x_9 - 1x_{10} \le -98.44466879$$

#### Student Number: 51 Student ID: 17238986

Minimise: 
$$z = -3x_1 - 3x_2 - 3x_3 - 1x_4 - 2x_5 + 3x_6 + 5x_8 + 3x_9 + 6x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +1x_1 + 4x_2 + 3x_3 + 2x_4 + 2x_5 + 3x_6 - 1x_7 + 2x_8 - 2x_9 + 3x_{10} &\leq 242.79980129 \\ +5x_1 + 3x_2 - 4x_3 + 5x_4 + 3x_5 - 3x_6 - 3x_7 - 1x_8 + 2x_9 &\leq 139.15653457 \\ +4x_1 + 4x_2 - 4x_3 + 4x_4 + 5x_5 + 1x_6 - 4x_7 + 1x_8 - 4x_{10} &\leq 141.76737154 \\ +3x_1 + 5x_2 - 4x_3 - 4x_4 - 4x_5 + 1x_6 + 1x_7 + 1x_8 + 1x_9 - 3x_{10} &\leq 29.45559457 \\ -2x_1 - 4x_2 + 1x_3 - 1x_4 - 1x_5 - 2x_6 + 4x_8 + 5x_9 + 4x_{10} &\leq 11.45461330 \\ -2x_1 - 3x_2 + 1x_3 - 3x_4 - 2x_5 + 2x_6 + 1x_7 - 4x_8 + 2x_9 + 2x_{10} &\leq -57.37881396 \\ -3x_1 + 4x_2 + 3x_3 - 4x_4 - 3x_5 + 4x_6 - 3x_7 + 4x_8 - 2x_9 + 4x_{10} &\leq 92.61693529 \\ +1x_1 - 1x_2 + 5x_3 - 1x_4 - 4x_5 + 2x_6 + 5x_7 + 2x_8 - 5x_9 - 2x_{10} &\leq -33.86763362 \\ -2x_1 - 1x_2 + 2x_3 - 5x_4 + 4x_5 + 3x_6 - 5x_7 + 4x_8 + 2x_9 - 4x_{10} &\leq -34.78046900 \\ +1x_1 - 1x_2 + 3x_3 - 1x_4 + 3x_5 + 4x_6 - 1x_7 + 4x_8 - 4x_9 - 1x_{10} &\leq 67.48389185 \end{aligned}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 52 Student ID: 17239214

Minimise: 
$$z = -5x_2 - 3x_3 + 5x_4 - 7x_6 + 1x_7 - 1x_8 + 2x_9 - 4x_{10}$$

Constraint Inequalities:

$$-3x_1 - 5x_2 + 3x_3 - 2x_4 - 4x_5 + 4x_6 - 3x_7 + 1x_8 + 1x_9 - 2x_{10} \le -104.91565160 \\ +3x_1 + 2x_2 + 3x_3 + 4x_5 - 1x_6 + 1x_8 + 3x_9 + 5x_{10} \le 192.17417404 \\ -1x_1 + 4x_2 - 5x_3 + 5x_4 + 2x_5 - 1x_6 - 4x_7 - 3x_8 + 1x_9 + 3x_{10} \le 66.07761068 \\ +1x_1 - 5x_2 + 3x_3 + 4x_4 + 3x_5 - 3x_6 + 2x_7 - 1x_8 + 2x_9 + 3x_{10} \le 81.05217550 \\ -3x_1 + 4x_2 - 3x_3 + 2x_4 - 3x_5 - 2x_6 - 5x_8 - 1x_9 + 2x_{10} \le -14.29812743 \\ +3x_1 + 3x_2 + 5x_3 - 5x_4 + 2x_5 + 3x_6 + 3x_7 - 2x_8 + 5x_9 + 4x_{10} \le 205.43020173 \\ +4x_1 + 4x_3 + 4x_4 + 3x_5 + 4x_6 + 2x_7 - 2x_8 - 1x_9 + 4x_{10} \le 117.20587413 \\ +1x_1 + 2x_2 - 1x_3 + 2x_4 + 2x_5 - 4x_6 + 1x_7 + 3x_8 - 1x_9 \le 46.79534528 \\ -2x_1 + 4x_2 + 4x_4 - 2x_5 - 2x_6 + 5x_7 + 2x_8 + 4x_9 - 1x_{10} \le 147.49184587 \\ -2x_1 - 2x_3 + 2x_4 - 5x_5 - 3x_6 + 1x_7 + 3x_8 - 5x_9 + 2x_{10} \le -98.73408191$$

#### Student Number: 53 Student ID: 17239958

Minimise: 
$$z = -3x_1 + 4x_2 + 1x_3 + 2x_4 + 5x_5 - 1x_6 - 4x_7 - 2x_9 + 5x_{10}$$

Constraint Inequalities:

$$-4x_1 + 2x_2 + 4x_3 - 4x_4 - 3x_6 - 1x_7 + 4x_9 + 2x_{10} \le -10.75442835 \\ +4x_1 + 3x_2 + 2x_3 - 4x_4 + 4x_5 - 3x_6 + 4x_7 + 4x_{10} \le 238.56493167 \\ +2x_1 + 4x_2 + 1x_3 - 1x_4 - 5x_5 - 1x_6 + 3x_7 - 1x_8 + 2x_9 \le 30.61296348 \\ -4x_1 - 2x_2 + 4x_3 - 2x_4 + 3x_5 + 1x_7 - 1x_8 + 1x_9 - 1x_{10} \le 9.65306606 \\ +5x_1 - 3x_3 - 1x_4 + 2x_5 + 2x_6 + 5x_7 + 2x_8 - 2x_9 \le 161.30808344 \\ +1x_1 - 3x_2 + 5x_3 - 4x_4 - 2x_5 + 4x_6 + 1x_7 + 4x_8 + 2x_9 + 3x_{10} \le 153.72267100 \\ +4x_1 - 1x_2 - 4x_3 - 2x_5 + 4x_6 + 4x_7 - 1x_8 - 4x_9 + 2x_{10} \le -7.92592962 \\ -2x_1 + 3x_2 + 4x_3 + 5x_4 - 4x_6 - 2x_7 + 1x_8 + 1x_9 + 1x_{10} \le 134.17663987 \\ +2x_1 - 5x_2 + 3x_3 + 5x_4 - 3x_5 + 4x_6 - 1x_7 - 4x_8 + 5x_9 + 4x_{10} \le 167.35652416 \\ -2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 5x_4 + 2x_5 + 1x_6 + 3x_7 - 3x_8 + 2x_9 + 3x_{10} \le -22.22477798 \\ -2x_1 - 2x_2 - 2x_3 - 2x_3$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 54 Student ID: 17240514

Minimise: 
$$z = +6x_1 - 2x_2 + 1x_3 + 5x_4 - 2x_5 - 6x_6 - 6x_7 + 1x_8$$

Constraint Inequalities:

$$-2x_2 + 1x_3 + 1x_4 - 1x_5 - 2x_7 + 2x_8 + 5x_9 - 3x_{10} \le 56.94148014$$

$$-2x_1 + 3x_2 + 4x_3 + 4x_4 - 2x_5 + 3x_6 - 2x_7 + 4x_8 + 3x_9 + 1x_{10} \le 146.38031982$$

$$-2x_1 - 2x_2 + 1x_3 + 5x_4 + 1x_5 - 4x_6 - 1x_7 - 4x_8 - 2x_9 - 5x_{10} \le -124.89747649$$

$$+1x_1 + 4x_2 + 4x_4 + 4x_5 + 4x_6 - 3x_7 - 4x_8 - 1x_{10} \le 36.56393935$$

$$+2x_1 + 4x_2 - 5x_4 - 5x_5 - 2x_6 + 2x_7 + 2x_8 + 4x_9 - 2x_{10} \le 94.76191231$$

$$-5x_1 - 3x_2 - 2x_3 - 2x_4 - 2x_5 - 2x_7 - 3x_8 + 4x_9 + 2x_{10} \le -123.41554336$$

$$+4x_2 + 1x_3 + 1x_4 - 2x_6 - 4x_7 - 3x_8 + 3x_9 + 4x_{10} \le 24.47993611$$

$$-2x_1 - 1x_2 - 1x_4 + 5x_5 + 1x_6 + 1x_7 + 2x_8 + 1x_9 + 3x_{10} \le 93.43561634$$

$$-1x_1 + 5x_2 - 5x_3 - 2x_4 - 5x_5 - 2x_6 + 2x_7 - 1x_8 + 5x_9 - 2x_{10} \le -13.68960983$$

$$-3x_2 + 3x_3 - 2x_5 - 1x_6 + 4x_7 - 2x_8 + 5x_9 + 3x_{10} \le 176.76880604$$

#### Student Number: 55 Student ID: 17240905

Minimise: 
$$z = -5x_1 + 3x_2 + 2x_3 + 2x_4 - 6x_5 + 2x_6 - 4x_7 + 3x_8 + 2x_9 - 1x_{10}$$

Constraint Inequalities:

$$-2x_1 + 4x_2 - 2x_3 + 2x_4 - 4x_6 + 5x_7 - 4x_8 + 4x_9 - 1x_{10} \le 79.01439453$$

$$-1x_1 + 5x_2 + 2x_3 - 5x_4 - 2x_5 + 1x_6 - 4x_7 + 4x_8 - 4x_9 - 5x_{10} \le -64.70994017$$

$$+2x_1 - 5x_2 + 4x_3 + 2x_4 + 2x_5 - 4x_6 - 1x_7 - 2x_8 - 3x_9 + 3x_{10} \le -84.48483886$$

$$-2x_1 - 5x_2 + 1x_3 + 3x_4 + 2x_6 - 3x_7 + 1x_8 - 1x_{10} \le -22.47468503$$

$$-2x_1 - 1x_2 + 3x_3 + 1x_4 - 1x_5 + 5x_6 - 2x_7 - 1x_8 + 1x_9 - 2x_{10} \le 38.15712558$$

$$-2x_1 + 2x_2 - 2x_3 - 4x_4 + 5x_5 + 5x_6 + 1x_7 - 1x_8 + 5x_9 + 2x_{10} \le 122.22034126$$

$$-1x_1 - 1x_2 + 2x_3 + 2x_4 - 1x_5 + 4x_6 + 1x_7 - 4x_8 + 4x_9 + 1x_{10} \le 72.35869659$$

$$+2x_1 - 2x_2 - 2x_3 + 2x_4 + 2x_5 + 4x_6 + 1x_8 - 2x_9 + 2x_{10} \le 74.29830494$$

$$-1x_1 + 3x_2 + 4x_3 + 1x_4 + 3x_5 - 1x_6 + 5x_7 + 2x_8 - 3x_{10} \le 214.35528313$$

$$+3x_1 - 5x_2 + 1x_4 + 1x_5 + 1x_6 - 3x_7 - 3x_8 + 4x_9 - 3x_{10} \le -75.93029933$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 56 Student ID: 17241162

Minimise: 
$$z = -5x_1 + 5x_2 + 1x_3 - 6x_4 - 2x_5 - 3x_6 - 1x_7 + 4x_8 + 3x_9 - 4x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +4x_1 + 5x_2 - 3x_3 + 4x_4 - 2x_5 + 1x_6 - 4x_7 - 2x_8 + 3x_9 + 1x_{10} &\leq 38.06536485 \\ -3x_1 + 5x_2 + 4x_3 + 3x_4 - 3x_5 - 3x_6 - 3x_7 - 2x_8 - 2x_9 - 4x_{10} &\leq -157.47923326 \\ -5x_1 + 5x_2 + 3x_3 - 4x_4 - 1x_5 + 2x_6 - 1x_8 + 3x_9 - 2x_{10} &\leq 34.83211960 \\ -3x_1 - 4x_2 + 5x_3 - 4x_4 + 4x_5 - 4x_6 + 5x_7 + 2x_8 + 3x_9 + 4x_{10} &\leq 70.16959298 \\ +3x_1 + 3x_2 + 1x_3 + 2x_4 - 1x_5 + 1x_6 + 4x_7 - 3x_8 + 4x_9 + 4x_{10} &\leq 187.05216512 \\ +4x_1 + 2x_2 - 5x_3 - 4x_4 - 2x_5 + 1x_6 + 3x_7 - 3x_8 + 4x_9 &\leq 101.44299962 \\ +3x_1 + 5x_2 - 3x_4 + 3x_5 + 4x_7 + 4x_8 + 3x_9 + 2x_{10} &\leq 185.28988317 \\ -1x_1 + 1x_2 + 2x_3 - 2x_4 - 5x_5 - 2x_6 + 4x_7 + 4x_8 - 4x_9 + 1x_{10} &\leq -1.13235090 \\ -1x_1 + 2x_2 - 4x_3 + 1x_4 + 3x_5 - 3x_6 + 3x_7 + 2x_8 + 4x_9 - 3x_{10} &\leq -0.72332587 \\ +3x_1 + 5x_2 + 1x_3 - 1x_4 - 4x_5 - 4x_6 - 2x_7 - 3x_8 + 4x_9 - 4x_{10} &\leq -71.84553835 \end{aligned}$$

### Student Number: 57 Student ID: 17243645

Minimise: 
$$z = -4x_1 - 6x_2 + 6x_4 + 5x_5 - 5x_6 - 6x_7 - 2x_9$$

Constraint Inequalities:

$$-4x_1 - 4x_2 + 2x_3 - 4x_4 + 5x_5 - 5x_6 + 5x_7 + 3x_9 + 4x_{10} \le 73.35698708$$

$$+5x_1 + 2x_2 - 4x_3 + 3x_4 + 4x_5 + 2x_6 + 2x_7 + 5x_8 - 2x_9 + 1x_{10} \le 38.37045645$$

$$-1x_1 + 4x_2 + 4x_3 + 1x_4 - 2x_5 + 3x_6 - 1x_7 - 5x_8 - 5x_9 + 4x_{10} \le 111.75275374$$

$$-5x_2 + 1x_3 + 1x_5 - 1x_6 + 2x_7 - 5x_8 + 2x_9 - 1x_{10} \le 14.26016588$$

$$-1x_1 - 2x_2 - 3x_3 - 2x_4 - 4x_5 + 2x_6 + 2x_7 - 2x_8 - 1x_9 - 2x_{10} \le -30.43613124$$

$$-2x_1 + 5x_2 - 2x_4 + 4x_5 - 4x_6 + 1x_7 - 3x_8 + 4x_9 + 5x_{10} \le 26.48227131$$

$$-3x_1 + 2x_2 + 1x_3 - 3x_4 - 2x_5 + 1x_6 - 3x_7 + 1x_8 + 5x_9 \le 7.26917211$$

$$+2x_1 + 1x_2 - 1x_3 + 3x_4 + 3x_5 - 2x_6 + 4x_7 + 5x_8 - 1x_9 \le 36.44321017$$

$$+2x_1 - 5x_2 + 4x_3 - 2x_4 + 3x_5 + 2x_6 + 3x_7 + 3x_8 + 2x_9 + 1x_{10} \le 183.36449415$$

$$-1x_1 + 2x_2 - 2x_3 + 4x_5 + 4x_6 + 5x_7 - 1x_8 + 5x_9 + 1x_{10} \le 165.80816944$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 58 Student ID: 18095488

Minimise: 
$$z = -6x_1 + 2x_2 - 3x_3 + 1x_4 - 5x_5 + 2x_7 - 2x_8 + 5x_9 + 1x_{10}$$

$$\begin{aligned} -2x_1 - 3x_2 - 3x_3 + 2x_4 - 1x_5 - 4x_6 - 1x_7 + 1x_8 + 4x_9 - 2x_{10} &\leq -49.31343421 \\ -4x_1 - 1x_2 + 4x_3 + 1x_4 + 3x_6 + 3x_7 - 5x_8 + 1x_9 - 4x_{10} &\leq 65.97578784 \\ -5x_1 + 2x_2 - 2x_3 + 3x_4 - 5x_5 + 1x_6 + 2x_7 + 4x_8 + 3x_9 - 1x_{10} &\leq 53.90481348 \\ +4x_1 + 2x_2 + 4x_3 + 2x_4 + 5x_5 + 3x_6 - 3x_7 + 3x_8 - 3x_9 + 2x_{10} &\leq 187.35349700 \\ +2x_1 - 2x_2 + 1x_3 + 4x_4 - 2x_5 + 3x_6 - 3x_7 + 4x_8 - 2x_9 - 4x_{10} &\leq 95.01512036 \\ +1x_1 - 2x_2 - 4x_3 + 2x_5 + 3x_6 + 3x_7 - 3x_8 - 1x_9 + 3x_{10} &\leq 30.43198025 \\ +4x_1 + 3x_2 + 2x_3 + 3x_4 - 3x_5 - 3x_6 - 2x_7 + 3x_9 &\leq 65.14376535 \\ +2x_1 - 5x_2 - 3x_3 - 4x_4 - 2x_5 + 3x_6 + 4x_7 - 4x_8 + 2x_9 - 5x_{10} &\leq -14.92968837 \\ -1x_1 + 4x_2 + 4x_4 - 2x_5 - 4x_6 + 3x_7 - 1x_8 + 1x_9 + 4x_{10} &\leq 11.42142647 \\ +5x_1 + 3x_2 + 5x_3 + 3x_4 - 2x_5 + 4x_6 - 3x_7 - 1x_8 - 3x_9 + 1x_{10} &\leq 121.17947038 \end{aligned}$$

$$x_i \ge 0, i = 1, \dots, n.$$

#### Student Number: 59 Student ID: 18110975

Minimise: 
$$z = -1x_1 - 4x_2 + 1x_3 + 1x_4 - 2x_5 - 5x_6 - 2x_7 + 3x_8 - 3x_{10}$$

Constraint Inequalities:

$$\begin{array}{c} -4x_1 - 3x_2 + 1x_3 - 5x_4 + 1x_5 + 4x_6 + 1x_7 + 5x_8 + 3x_9 - 4x_{10} \leq -94.14136045 \\ -2x_1 - 3x_2 - 5x_3 - 1x_4 - 4x_6 + 3x_7 - 1x_8 - 5x_9 - 2x_{10} \leq -179.54170314 \\ -2x_1 + 1x_2 + 1x_3 + 5x_4 + 3x_5 + 2x_6 + 4x_7 + 2x_8 + 1x_9 - 5x_{10} \leq 32.36053245 \\ +1x_1 - 3x_2 + 4x_3 - 5x_4 + 2x_5 - 2x_6 - 4x_7 + 1x_{10} \leq -4.76824802 \\ -2x_1 + 2x_2 - 4x_3 - 3x_4 - 4x_5 + 2x_6 - 1x_7 + 1x_8 + 1x_9 - 1x_{10} \leq -125.48546075 \\ +3x_1 - 1x_2 - 2x_3 - 1x_4 + 3x_5 - 2x_6 + 4x_7 - 2x_8 - 3x_9 - 2x_{10} \leq -64.05569701 \\ +4x_1 + 1x_2 + 1x_4 + 3x_5 - 3x_6 + 1x_7 - 2x_8 + 4x_{10} \leq 99.36433104 \\ +3x_1 + 3x_2 - 4x_3 - 3x_4 - 4x_5 + 4x_6 + 3x_7 + 2x_8 - 2x_9 + 1x_{10} \leq -32.96526324 \\ +4x_1 + 1x_2 - 1x_3 + 3x_5 - 3x_6 + 5x_7 - 4x_8 + 5x_9 \leq 41.12424172 \\ -1x_1 - 1x_2 - 5x_3 - 1x_4 + 2x_5 + 1x_6 + 1x_7 - 3x_8 - 1x_{10} \leq -130.45688407 \end{array}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 60 Student ID: 18111203

Minimise: 
$$z = +3x_1 - 6x_2 + 1x_3 - 4x_4 - 1x_5 - 5x_6 + 5x_7 - 7x_8 - 3x_9 - 7x_{10}$$

$$\begin{aligned} +2x_1 - 5x_2 + 4x_3 + 2x_4 - 2x_5 + 4x_6 - 1x_7 + 2x_8 - 2x_9 + 2x_{10} &\leq 125.63930487 \\ -1x_1 + 4x_2 + 2x_3 - 2x_4 + 4x_5 + 3x_6 + 1x_7 - 3x_8 + 4x_9 + 4x_{10} &\leq 123.25345832 \\ -5x_2 - 4x_3 + 1x_4 + 3x_5 - 2x_7 + 4x_8 + 4x_9 + 2x_{10} &\leq 73.71263371 \\ -1x_1 + 1x_2 + 2x_3 - 4x_6 + 5x_8 - 1x_9 + 2x_{10} &\leq 70.22775918 \\ -3x_1 - 4x_2 - 1x_3 + 3x_4 - 1x_5 + 2x_6 - 1x_7 + 1x_8 + 1x_9 + 4x_{10} &\leq 62.88640301 \\ -1x_1 - 4x_2 + 4x_3 + 4x_4 + 4x_5 + 3x_6 - 1x_7 + 2x_8 - 4x_{10} &\leq 91.46739379 \\ &\qquad \qquad +4x_1 + 3x_2 + 5x_4 - 1x_6 + 3x_7 + 3x_8 &\leq 223.18507529 \\ -1x_1 - 5x_2 + 1x_3 + 3x_4 + 4x_5 + 3x_6 + 1x_7 - 3x_8 - 2x_9 + 4x_{10} &\leq 140.72763695 \\ &\qquad \qquad +2x_1 - 1x_2 - 1x_3 - 2x_4 - 4x_5 + 2x_6 - 1x_7 + 4x_8 + 4x_{10} &\leq 51.79227452 \\ +3x_1 - 2x_2 - 2x_3 + 4x_4 + 5x_5 + 1x_6 - 2x_7 - 3x_8 + 5x_9 - 3x_{10} &\leq 71.13216910 \end{aligned}$$

#### Student Number: 61 Student ID: 18111211

Minimise: 
$$z = -1x_1 + 5x_2 + 1x_3 - 6x_4 + 1x_5 - 3x_6 + 2x_7 - 2x_8 - 6x_9 + 1x_{10}$$

Constraint Inequalities:

$$\begin{aligned} -1x_1 - 1x_2 - 2x_3 + 1x_4 + 3x_5 + 3x_6 - 3x_7 + 2x_8 - 1x_9 - 2x_{10} &\leq 12.67245114 \\ +1x_2 + 4x_3 + 2x_4 + 3x_5 - 3x_6 - 3x_7 + 2x_8 - 3x_9 - 2x_{10} &\leq 68.91310765 \\ -1x_1 + 4x_3 + 3x_4 - 2x_5 + 1x_8 + 4x_9 - 5x_{10} &\leq -24.91721094 \\ +5x_1 - 1x_2 - 2x_3 - 3x_4 + 3x_6 - 3x_7 + 2x_8 + 4x_{10} &\leq 81.09226039 \\ +2x_1 + 4x_2 + 4x_3 - 4x_4 + 4x_5 - 5x_6 + 3x_7 + 4x_9 + 4x_{10} &\leq 221.65908015 \\ -2x_2 - 5x_3 + 4x_4 + 2x_5 + 4x_6 + 3x_8 + 2x_9 + 4x_{10} &\leq 88.60957351 \\ +1x_1 + 2x_4 - 1x_5 + 3x_6 + 3x_7 - 2x_8 - 3x_9 + 2x_{10} &\leq 38.32924723 \\ +4x_1 + 4x_2 + 1x_4 + 2x_6 - 2x_7 - 4x_8 + 1x_9 &\leq 97.02361212 \\ +2x_1 - 3x_3 - 1x_5 + 1x_6 + 4x_7 - 1x_8 + 4x_9 - 1x_{10} &\leq 16.96121414 \\ +3x_1 + 1x_2 + 3x_3 + 2x_4 - 5x_5 - 1x_6 - 1x_7 + 1x_8 - 2x_9 - 3x_{10} &\leq -31.19562402 \end{aligned}$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 62 Student ID: 18111254

Minimise: 
$$z = +2x_1 - 2x_2 - 4x_3 + 4x_4 - 3x_5 - 6x_6 - 6x_7 + 4x_8 - 2x_9 - 2x_{10}$$

$$+4x_1 + 2x_2 + 4x_3 + 2x_4 - 2x_7 + 4x_8 - 2x_{10} \le 180.57453991$$

$$-5x_1 + 2x_2 - 2x_3 + 5x_5 + 1x_6 + 3x_7 - 2x_8 + 3x_9 + 1x_{10} \le 50.57904017$$

$$+1x_1 - 1x_2 - 4x_3 - 4x_4 + 4x_5 + 1x_6 + 2x_7 - 3x_8 - 4x_9 - 3x_{10} \le -138.96449741$$

$$+1x_1 - 1x_2 + 4x_3 + 4x_5 - 4x_6 - 3x_7 + 3x_9 \le 43.41898837$$

$$-2x_1 + 1x_2 + 2x_3 - 5x_4 + 2x_5 - 1x_6 - 4x_7 - 1x_8 - 1x_9 - 5x_{10} \le -151.36949941$$

$$+1x_1 - 2x_2 - 5x_3 - 5x_4 - 5x_5 + 4x_6 + 4x_7 - 3x_8 + 4x_{10} \le -155.10969484$$

$$-3x_2 + 3x_3 - 5x_4 + 5x_5 - 2x_6 + 4x_7 - 3x_8 - 2x_9 - 1x_{10} \le -155.11209973$$

$$+4x_1 - 1x_2 + 1x_3 - 4x_4 + 5x_5 + 2x_6 - 2x_7 + 4x_8 + 2x_9 - 1x_{10} \le 130.01196291$$

$$-1x_2 - 5x_3 - 2x_4 + 4x_5 - 1x_6 - 2x_7 - 3x_8 - 3x_9 + 4x_{10} \le -131.10070368$$

$$+2x_1 - 4x_3 + 5x_5 + 3x_6 + 2x_7 + 4x_9 - 4x_{10} \le 168.26650563$$

$$x_i \geq 0, i = 1, \ldots, n.$$

#### Student Number: 63 Student ID: 18111327

Minimise: 
$$z = -3x_1 - 4x_2 + 2x_3 - 1x_4 + 2x_5 - 1x_6 - 2x_7 + 6x_8 - 5x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +1x_1 + 3x_2 + 2x_3 + 3x_4 + 3x_5 - 5x_6 + 4x_7 - 1x_8 - 4x_9 + 4x_{10} &\leq 43.53334313 \\ +3x_2 + 4x_3 + 2x_4 + 5x_5 - 3x_6 + 4x_7 + 5x_8 - 4x_9 - 3x_{10} &\leq 19.80274925 \\ +1x_1 - 3x_3 + 5x_4 - 1x_5 - 4x_6 - 4x_7 + 3x_8 + 3x_9 - 4x_{10} &\leq -126.01310901 \\ -4x_1 - 2x_2 - 1x_3 - 2x_4 + 1x_5 + 3x_6 - 1x_7 - 4x_8 + 1x_{10} &\leq -23.23068343 \\ +2x_1 + 4x_3 + 3x_4 - 2x_6 + 5x_7 + 5x_8 - 3x_9 - 3x_{10} &\leq 35.06587114 \\ -2x_1 + 3x_2 - 3x_3 - 2x_4 + 1x_5 - 5x_6 - 2x_7 + 2x_8 + 2x_9 - 2x_{10} &\leq -139.84791872 \\ -2x_1 + 3x_2 + 5x_3 + 3x_4 - 2x_5 - 3x_6 + 2x_7 - 3x_8 - 4x_{10} &\leq -55.74742316 \\ +5x_1 - 4x_3 - 4x_4 - 3x_5 + 4x_7 - 1x_8 + 4x_9 - 3x_{10} &\leq 21.32250418 \\ +3x_1 + 1x_3 - 4x_4 + 2x_5 + 4x_6 + 1x_7 + 4x_8 + 4x_9 + 2x_{10} &\leq 193.16636575 \\ -5x_1 + 1x_2 - 3x_3 - 3x_4 - 5x_5 + 2x_6 - 3x_7 + 4x_8 + 2x_9 + 2x_{10} &\leq -28.52688996 \end{aligned}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 64 Student ID: 18111386

Minimise: 
$$z = +1x_1 + 2x_2 + 4x_3 + 4x_5 - 3x_6 + 5x_7 + 5x_8 - 3x_9$$

Constraint Inequalities:

$$\begin{aligned} +3x_1 - 2x_2 - 3x_3 + 1x_4 - 4x_5 - 3x_6 + 3x_7 + 2x_8 - 3x_9 + 3x_{10} &\leq 10.87684147 \\ -1x_1 + 5x_2 - 2x_4 + 1x_5 - 2x_7 + 1x_8 + 4x_9 + 1x_{10} &\leq 1.02593492 \\ -3x_1 - 4x_2 - 1x_3 + 4x_4 + 2x_5 + 1x_6 + 2x_7 - 5x_8 - 4x_9 - 1x_{10} &\leq -71.20847043 \\ +3x_1 + 1x_2 - 2x_3 + 5x_4 - 2x_5 - 3x_6 + 2x_7 - 1x_8 - 2x_9 + 5x_{10} &\leq 49.84771226 \\ +1x_1 + 5x_3 + 1x_4 + 3x_5 - 2x_6 + 4x_7 - 5x_8 - 3x_9 - 2x_{10} &\leq 99.16285096 \\ -1x_1 - 1x_2 + 1x_4 + 3x_5 - 1x_6 - 2x_7 - 4x_9 + 4x_{10} &\leq -24.78691590 \\ -2x_2 + 1x_3 + 4x_4 - 1x_5 - 5x_6 - 1x_7 + 4x_8 - 4x_9 - 2x_{10} &\leq 3.45769853 \\ +5x_2 - 3x_3 + 3x_4 + 1x_5 - 1x_6 - 4x_7 + 5x_8 - 4x_9 - 3x_{10} &\leq 3.14315629 \\ +2x_1 - 4x_2 + 4x_3 + 2x_4 + 1x_5 + 2x_6 + 4x_7 - 5x_8 + 2x_9 + 1x_{10} &\leq 118.29190062 \\ -1x_1 - 1x_2 - 2x_3 + 3x_4 + 4x_5 - 3x_6 + 1x_7 - 2x_8 - 2x_{10} &\leq 6.94831897 \end{aligned}$$

#### Student Number: 65 Student ID: 18111394

Minimise: 
$$z = -5x_1 - 3x_2 + 1x_3 - 6x_4 - 4x_5 - 5x_6 - 4x_7 + 3x_8 - 5x_9 + 6x_{10}$$

Constraint Inequalities:

$$\begin{aligned} &+4x_1-3x_2+4x_3+1x_5-4x_6+3x_7+1x_8+5x_9-2x_{10} \leq 11.67837892 \\ &+1x_1-3x_2+1x_3+1x_4+2x_5-1x_7+1x_8+3x_9-4x_{10} \leq 0.96858323 \\ &+4x_1+3x_2-1x_3-3x_4+1x_5+2x_7+1x_8-2x_9+1x_{10} \leq 26.29841201 \\ &-4x_1-3x_2+2x_3+2x_4-2x_5-3x_6-4x_7+1x_8-3x_9+1x_{10} \leq -73.74107828 \\ &-2x_1+4x_2+1x_3+4x_4-1x_5+2x_6+2x_7+4x_8-2x_9+3x_{10} \leq 154.47601753 \\ &+4x_1+1x_2-4x_3-3x_4+3x_5+1x_6-3x_7-2x_8-2x_9-2x_{10} \leq -56.08926496 \\ &-1x_1-1x_2-3x_3-3x_4+3x_5+1x_6+3x_7-3x_8-3x_9+4x_{10} \leq 68.47890031 \\ &-1x_1-1x_2-4x_3-1x_5-2x_7-1x_8-4x_9-1x_{10} \leq -90.12142120 \\ &+2x_1+2x_2-5x_3-3x_4-1x_6+5x_7-4x_9+4x_{10} \leq 25.30698747 \\ &-4x_1+1x_2+5x_4-2x_5+2x_6-4x_7+1x_8+1x_9+2x_{10} \leq 37.94371494 \end{aligned}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 66 Student ID: 18111408

Minimise: 
$$z = +3x_1 + 2x_2 - 6x_3 - 3x_4 - 1x_5 + 3x_6 + 4x_8 - 2x_9 - 2x_{10}$$

Constraint Inequalities:

$$+3x_2 + 1x_3 + 5x_4 - 3x_5 - 2x_6 + 1x_7 + 3x_8 + 2x_{10} \le 93.85154548$$

$$-2x_1 - 4x_2 - 3x_3 - 3x_4 + 1x_5 - 3x_6 + 2x_7 + 2x_8 + 3x_9 - 4x_{10} \le -50.86506966$$

$$-1x_1 - 3x_2 + 3x_3 - 3x_4 - 2x_5 - 3x_6 - 3x_7 + 3x_8 + 1x_9 + 4x_{10} \le -97.03707621$$

$$+1x_1 - 2x_2 + 3x_3 + 4x_4 + 1x_5 - 1x_6 + 2x_7 - 2x_8 - 1x_9 - 4x_{10} \le 39.17214196$$

$$-4x_1 + 3x_2 + 5x_3 - 1x_4 + 2x_5 - 4x_6 + 1x_7 + 5x_8 - 5x_9 + 1x_{10} \le 36.03585320$$

$$+3x_1 - 3x_2 + 4x_3 - 2x_4 - 3x_5 + 2x_6 + 2x_7 - 4x_8 + 3x_{10} \le -63.77369496$$

$$-1x_1 + 3x_2 + 4x_3 + 1x_4 - 3x_5 - 1x_6 + 1x_7 + 3x_8 - 3x_9 \le 10.26242030$$

$$-4x_1 + 3x_2 - 3x_3 + 2x_4 + 3x_5 + 1x_6 - 4x_7 + 3x_8 + 2x_9 + 3x_{10} \le 102.70756953$$

$$+1x_1 - 3x_2 + 2x_3 + 5x_6 - 3x_7 + 3x_8 + 5x_9 - 1x_{10} \le 38.90187926$$

$$+1x_1 - 5x_2 + 4x_3 - 2x_5 - 1x_6 + 4x_7 - 3x_8 + 2x_9 + 5x_{10} \le 0.40046289$$

#### Student Number: 67 Student ID: 18111424

Minimise: 
$$z = -2x_1 + 4x_2 - 6x_3 - 6x_4 + 5x_5 - 2x_6 - 6x_7 - 3x_8 - 4x_9 + 6x_{10}$$

Constraint Inequalities:

$$-2x_1 - 3x_2 + 4x_3 + 3x_4 + 4x_6 + 3x_7 - 4x_9 - 2x_{10} \le -16.51088740$$

$$-3x_1 + 1x_2 + 4x_3 + 1x_4 - 1x_5 + 4x_6 - 5x_8 - 1x_9 - 4x_{10} \le -49.25817049$$

$$-2x_1 + 4x_2 - 2x_3 - 2x_4 - 2x_5 - 1x_6 - 1x_7 - 5x_8 + 4x_9 + 1x_{10} \le -36.85949914$$

$$+3x_1 + 4x_2 + 4x_3 + 3x_4 - 3x_5 - 3x_6 + 4x_7 + 2x_8 + 3x_9 - 4x_{10} \le 166.12109160$$

$$-1x_1 - 3x_2 - 2x_4 - 4x_5 - 5x_6 - 3x_7 - 1x_8 - 1x_9 + 2x_{10} \le -102.47547236$$

$$-1x_1 + 1x_2 - 4x_3 + 2x_4 + 2x_5 + 2x_6 + 4x_7 - 5x_8 + 3x_9 - 3x_{10} \le -127.16409857$$

$$-3x_1 - 2x_3 + 1x_4 + 5x_5 + 4x_6 + 1x_7 - 1x_8 + 3x_9 + 4x_{10} \le 38.10690466$$

$$-2x_2 - 4x_3 - 5x_4 - 1x_5 - 3x_6 + 5x_7 + 1x_9 + 5x_{10} \le -61.68296823$$

$$-3x_1 + 4x_2 + 4x_3 + 4x_4 + 2x_5 - 2x_6 + 3x_7 + 5x_8 - 4x_9 + 1x_{10} \le 227.68927792$$

$$-5x_1 - 3x_2 - 1x_3 - 3x_4 - 4x_5 - 2x_6 - 4x_7 - 4x_8 - 3x_9 - 3x_{10} \le -261.98784202$$

$$x_i \geq 0, i = 1, \ldots, n.$$

## Student Number: 68 Student ID: 18111467

Minimise: 
$$z = -5x_1 - 6x_2 + 2x_3 - 3x_4 - 4x_5 - 6x_6 - 2x_7 + 1x_8 + 2x_9 + 5x_{10}$$

$$-2x_1 - 2x_3 - 2x_4 + 2x_5 + 2x_6 - 1x_7 - 3x_8 - 4x_9 - 3x_{10} \le -183.42639577$$

$$-2x_2 - 1x_3 - 1x_4 - 3x_5 + 2x_6 - 4x_7 + 5x_8 + 1x_9 + 5x_{10} \le 7.48784841$$

$$-5x_1 + 3x_2 + 3x_3 - 2x_4 + 4x_5 + 1x_6 - 3x_7 + 1x_8 + 1x_9 + 4x_{10} \le 90.51221853$$

$$+1x_1 + 3x_2 - 4x_3 + 4x_4 - 2x_5 - 2x_6 + 4x_8 + 3x_9 + 2x_{10} \le 168.90634060$$

$$+1x_1 - 1x_2 - 2x_3 + 4x_4 + 1x_5 - 5x_6 + 1x_7 + 3x_8 + 4x_9 \le 100.32867732$$

$$+2x_1 - 1x_2 + 2x_3 + 2x_4 + 5x_5 + 1x_6 + 3x_7 - 2x_8 - 2x_9 + 5x_{10} \le 194.10064884$$

$$+2x_1 + 3x_3 + 2x_4 - 1x_5 + 2x_6 - 4x_7 + 2x_8 + 3x_9 + 5x_{10} \le 169.17190054$$

$$+5x_2 - 5x_3 - 3x_4 + 2x_5 - 1x_6 + 1x_7 - 4x_8 + 4x_9 + 1x_{10} \le 110.33308064$$

$$-1x_1 + 4x_2 + 1x_3 - 1x_4 + 1x_5 + 2x_6 - 5x_7 + 4x_9 - 4x_{10} \le -5.54924801$$

$$-3x_1 + 2x_2 + 4x_3 - 1x_4 + 3x_5 - 4x_6 + 5x_7 + 4x_8 - 2x_9 + 2x_{10} \le 104.67975636$$

$$x_i \ge 0, i = 1, \dots, n.$$

#### Student Number: 69 Student ID: 18111521

Minimise: 
$$z = -2x_1 - 4x_2 + 6x_4 - 5x_5 - 7x_6 - 2x_7 + 1x_8 - 2x_9 - 5x_{10}$$

Constraint Inequalities:

$$+5x_1 - 3x_2 + 4x_3 - 5x_4 + 1x_5 + 1x_6 - 2x_7 + 1x_8 - 2x_9 + 3x_{10} \le -48.11166538$$

$$-1x_1 + 4x_2 + 4x_3 + 4x_4 - 5x_5 + 4x_6 - 1x_7 + 1x_8 + 1x_9 + 4x_{10} \le 182.27087185$$

$$-2x_1 + 5x_2 - 1x_3 + 2x_4 + 3x_5 + 4x_6 + 3x_7 - 1x_8 - 1x_{10} \le 147.45636480$$

$$-2x_1 + 4x_2 - 4x_3 - 3x_4 + 4x_5 + 4x_6 - 4x_7 - 2x_8 + 3x_9 - 1x_{10} \le 50.04439649$$

$$-3x_1 - 1x_2 + 1x_3 + 2x_4 + 2x_5 - 2x_6 - 5x_7 - 1x_8 - 2x_{10} \le -32.73834288$$

$$-4x_1 - 2x_2 - 1x_3 + 4x_4 + 5x_5 - 5x_8 - 2x_9 - 2x_{10} \le -45.46840390$$

$$+4x_1 - 4x_2 - 3x_3 - 3x_4 + 3x_5 + 4x_6 + 2x_7 - 4x_8 - 1x_9 + 2x_{10} \le -82.83038298$$

$$-1x_1 - 3x_2 - 2x_3 - 3x_4 + 1x_5 - 3x_6 + 5x_7 - 1x_8 - 4x_9 + 2x_{10} \le -167.30089590$$

$$+1x_1 + 4x_2 - 4x_3 - 4x_4 - 1x_5 + 1x_6 - 2x_7 + 2x_8 + 2x_9 - 2x_{10} \le 9.43730093$$

$$-3x_1 + 2x_2 + 3x_4 + 4x_5 - 3x_6 - 1x_7 + 5x_8 + 2x_9 + 2x_{10} \le 123.10851935$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 70 Student ID: 18111556

Minimise: 
$$z = +1x_1 - 3x_2 + 1x_3 - 2x_6 + 2x_7 + 5x_8 - 5x_9 - 1x_{10}$$

Constraint Inequalities:

$$+3x_1 + 3x_2 - 5x_4 - 2x_5 - 3x_6 + 1x_8 + 4x_9 \le 52.08255074$$

$$-4x_1 - 4x_2 - 4x_3 + 5x_4 + 3x_5 + 4x_6 - 4x_7 + 5x_8 - 5x_9 + 3x_{10} \le -46.35330739$$

$$+5x_1 + 3x_2 - 5x_3 - 1x_4 - 1x_5 - 2x_6 - 2x_7 - 5x_8 + 3x_9 - 5x_{10} \le -111.27005477$$

$$+4x_1 - 1x_2 + 3x_3 + 3x_4 + 2x_5 + 5x_6 - 3x_7 + 3x_8 - 5x_9 + 4x_{10} \le 165.12859529$$

$$-2x_2 + 4x_3 - 2x_4 - 1x_5 - 1x_6 + 5x_7 - 2x_8 + 4x_9 + 4x_{10} \le 109.09213823$$

$$-4x_1 + 2x_2 + 4x_3 + 4x_4 + 4x_5 - 5x_6 - 3x_7 - 3x_8 - 1x_{10} \le 65.94748038$$

$$-5x_1 + 2x_2 - 1x_3 - 3x_4 + 2x_5 + 4x_6 - 2x_7 - 3x_8 + 3x_9 + 3x_{10} \le -35.66204729$$

$$-4x_1 + 2x_2 + 3x_3 - 1x_4 - 2x_5 - 2x_6 - 2x_7 + 4x_8 + 1x_9 + 4x_{10} \le 112.08761201$$

$$-2x_1 + 3x_2 - 1x_3 + 4x_4 + 3x_5 - 2x_6 - 1x_7 - 4x_9 - 1x_{10} \le -5.83492612$$

$$-4x_1 + 1x_2 + 5x_3 + 2x_4 + 3x_5 - 1x_6 - 4x_7 - 4x_8 - 1x_9 - 1x_{10} \le 9.90892982$$

#### Student Number: 71 Student ID: 18111823

Minimise: 
$$z = -4x_1 + 1x_2 - 3x_3 - 1x_4 - 2x_5 - 5x_6 - 3x_7 + 5x_8 - 4x_{10}$$

Constraint Inequalities:

$$+4x_1 - 2x_2 + 5x_3 + 2x_4 - 3x_5 + 4x_6 + 4x_7 - 3x_9 + 4x_{10} \le 72.44148338$$

$$-4x_1 - 1x_2 + 1x_3 + 3x_4 - 2x_5 + 1x_6 - 4x_7 + 5x_8 - 1x_9 + 1x_{10} \le 4.74109605$$

$$-1x_1 + 5x_2 + 2x_3 + 5x_4 + 1x_5 + 2x_6 + 4x_7 - 2x_8 - 3x_9 - 3x_{10} \le 0.04583545$$

$$-4x_1 - 3x_2 + 3x_3 + 4x_4 - 1x_5 + 1x_6 - 3x_7 - 5x_9 - 1x_{10} \le -116.34862866$$

$$+4x_1 - 2x_3 + 1x_4 - 2x_5 + 3x_6 - 4x_7 - 3x_9 - 4x_{10} \le -46.11391269$$

$$-4x_1 - 3x_2 + 1x_3 + 4x_4 + 3x_5 + 1x_7 + 4x_8 + 4x_9 \le 130.76722686$$

$$-1x_2 - 3x_4 - 4x_5 - 4x_6 + 1x_7 + 1x_8 + 5x_9 \le 26.69457266$$

$$-3x_2 + 1x_3 + 3x_4 - 2x_5 + 3x_6 + 4x_7 - 4x_8 + 4x_9 + 3x_{10} \le 111.89470550$$

$$-1x_2 - 5x_4 + 4x_6 - 4x_7 + 4x_8 - 1x_9 - 4x_{10} \le -31.99134519$$

$$+1x_2 + 1x_3 + 3x_4 + 4x_5 - 2x_7 + 4x_8 - 1x_9 + 3x_{10} \le 84.40929024$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 72 Student ID: 18138659

Minimise: 
$$z = -5x_1 + 5x_2 - 4x_3 + 4x_4 + 2x_5 + 2x_6 - 3x_7 + 6x_8 + 5x_9 - 5x_{10}$$

Constraint Inequalities:

$$-2x_1 - 4x_2 + 1x_3 - 1x_4 - 4x_5 + 3x_6 + 2x_7 + 3x_9 - 5x_{10} \le 47.96881147$$

$$-3x_1 - 4x_2 - 3x_3 - 3x_4 + 2x_5 - 3x_6 + 5x_7 - 5x_8 + 2x_9 - 4x_{10} \le -29.84230181$$

$$+2x_1 + 3x_3 - 4x_4 + 2x_5 + 5x_7 - 3x_8 + 5x_9 - 4x_{10} \le 161.94801262$$

$$-1x_2 + 3x_4 - 5x_5 - 3x_6 + 2x_7 + 2x_8 - 2x_9 + 2x_{10} \le -39.94295397$$

$$+2x_1 + 2x_2 - 3x_3 + 1x_4 + 5x_5 - 2x_6 + 1x_7 + 2x_8 + 1x_9 + 1x_{10} \le 33.97886288$$

$$+1x_1 - 2x_2 + 4x_3 + 3x_4 - 4x_5 + 2x_6 - 1x_8 + 2x_9 + 3x_{10} \le 99.07547133$$

$$-1x_1 + 1x_2 - 4x_3 + 4x_4 - 2x_5 + 4x_6 - 1x_9 + 5x_{10} \le 42.37391761$$

$$-3x_1 + 4x_2 + 5x_3 - 4x_4 + 3x_5 + 5x_6 + 4x_7 - 1x_8 - 3x_9 + 2x_{10} \le 130.87263905$$

$$-1x_1 + 2x_2 + 1x_3 + 1x_4 - 1x_5 + 1x_6 + 3x_7 - 1x_8 + 1x_9 - 1x_{10} \le 77.96693110$$

$$-4x_1 - 2x_2 + 2x_3 + 3x_4 + 5x_5 + 4x_6 - 3x_7 + 3x_9 \le 51.79944818$$

#### Student Number: 73 Student ID: 18138659

Minimise: 
$$z = +3x_1 - 6x_2 - 7x_3 - 6x_4 - 5x_5 + 3x_6 + 3x_7 - 6x_8 + 3x_{10}$$

Constraint Inequalities:

$$\begin{aligned} +1x_1 - 1x_3 + 3x_4 - 1x_5 + 3x_6 + 4x_9 - 4x_{10} &\leq 64.18782951 \\ +3x_1 + 5x_2 - 2x_3 + 4x_4 - 4x_5 - 1x_6 - 5x_7 - 3x_8 + 2x_9 + 1x_{10} &\leq -99.96612677 \\ +1x_1 + 3x_2 + 2x_3 - 2x_4 - 1x_5 - 2x_6 - 4x_7 + 2x_8 - 1x_9 + 2x_{10} &\leq -26.28241452 \\ +4x_1 + 4x_2 + 2x_3 + 3x_4 + 3x_5 - 5x_6 - 3x_8 + 4x_9 &\leq 37.33922167 \\ -2x_1 + 2x_2 + 4x_3 + 4x_4 - 2x_6 - 3x_7 - 2x_9 - 5x_{10} &\leq -28.79805549 \\ -3x_1 + 3x_4 + 3x_5 + 3x_6 - 3x_7 + 1x_8 - 5x_9 - 4x_{10} &\leq 22.81038700 \\ +3x_1 - 3x_2 - 2x_3 - 1x_4 - 4x_5 + 3x_6 + 3x_7 + 3x_8 - 2x_9 &\leq 59.18743013 \\ +3x_1 + 5x_2 + 4x_3 + 1x_4 - 1x_5 - 3x_6 - 2x_7 + 1x_8 + 3x_9 + 1x_{10} &\leq 69.07769669 \\ +3x_1 + 4x_2 + 1x_3 + 2x_4 + 2x_5 + 1x_6 - 1x_7 - 4x_8 + 4x_9 + 1x_{10} &\leq 73.03498916 \\ -1x_1 - 1x_2 + 3x_3 + 4x_4 + 2x_5 - 1x_6 - 2x_7 - 3x_8 + 3x_9 + 3x_{10} &\leq 19.82829064 \end{aligned}$$

 $x_i \geq 0, i = 1, \ldots, n.$ 

## Student Number: 74 Student ID: 18278671

Minimise: 
$$z = -2x_1 - 2x_2 - 6x_3 - 2x_4 - 2x_5 + 5x_7 - 5x_9 - 3x_{10}$$

Constraint Inequalities:

$$+1x_1 + 2x_2 + 4x_4 - 4x_5 + 1x_6 + 3x_7 + 1x_8 + 1x_9 + 4x_{10} \le 145.44417557 \\ -4x_1 - 1x_2 - 2x_4 + 2x_5 - 2x_6 + 4x_7 - 1x_8 + 4x_9 + 3x_{10} \le 29.41386644 \\ +4x_2 - 5x_3 + 2x_4 - 4x_5 - 3x_6 - 4x_7 - 1x_8 - 2x_9 + 1x_{10} \le -157.27798961 \\ +4x_1 - 1x_2 + 5x_3 + 1x_4 + 1x_5 - 4x_6 - 3x_8 - 3x_9 + 2x_{10} \le 63.06783075 \\ -4x_1 + 3x_2 - 1x_3 + 4x_4 - 2x_6 - 3x_7 + 2x_8 - 5x_9 - 1x_{10} \le -118.71950805 \\ +1x_1 + 4x_2 - 2x_3 - 4x_4 - 5x_5 + 1x_6 + 1x_7 - 3x_8 - 5x_9 + 5x_{10} \le -149.06038668 \\ -1x_1 - 3x_2 + 2x_3 - 1x_4 + 5x_5 - 3x_6 + 4x_7 - 4x_8 + 4x_9 - 1x_{10} \le 92.29819042 \\ +1x_1 + 4x_2 - 2x_3 - 1x_4 - 1x_5 + 4x_6 - 2x_7 - 2x_9 + 2x_{10} \le -24.46932291 \\ +2x_1 - 5x_2 - 1x_3 - 1x_4 + 3x_5 + 5x_6 + 4x_7 + 5x_8 - 2x_9 - 1x_{10} \le 19.65552204 \\ +2x_1 + 4x_3 + 1x_4 + 2x_5 - 2x_6 + 2x_7 - 1x_8 + 5x_9 + 3x_{10} \le 242.24040461$$

## Student Number: 75 Student ID: 611972

Minimise: 
$$z = -4x_1 + 4x_2 - 4x_3 - 4x_4 - 7x_5 + 1x_6 + 5x_7 - 4x_8 - 5x_9 - 3x_{10}$$

Constraint Inequalities:

$$+4x_1 + 3x_2 + 3x_3 + 1x_4 + 3x_5 + 1x_7 - 2x_8 - 1x_{10} \le 163.39172895$$

$$-3x_1 + 3x_2 + 1x_3 - 3x_4 - 5x_5 - 5x_6 + 5x_8 - 4x_9 - 3x_{10} \le -95.47429760$$

$$+1x_1 - 3x_2 + 4x_3 + 3x_4 + 4x_5 + 3x_7 - 1x_8 - 5x_9 - 3x_{10} \le 99.09383320$$

$$-2x_1 - 5x_3 - 1x_4 + 4x_5 + 3x_6 + 3x_7 + 3x_8 + 3x_9 \le 31.09686211$$

$$-2x_1 - 2x_2 + 1x_3 - 1x_4 - 1x_5 + 4x_6 - 4x_7 + 4x_8 - 3x_9 + 4x_{10} \le 0.48938781$$

$$-1x_1 - 2x_2 - 4x_3 - 4x_4 - 1x_5 - 4x_6 - 2x_7 + 3x_9 + 5x_{10} \le -202.58362106$$

$$+2x_1 - 3x_2 - 4x_3 + 3x_4 - 1x_5 - 4x_6 + 4x_7 - 1x_8 - 3x_9 + 4x_{10} \le -33.96514765$$

$$-2x_1 - 3x_4 + 3x_5 - 1x_6 + 3x_7 + 3x_8 + 4x_9 + 1x_{10} \le 43.11857520$$

$$+1x_4 - 2x_5 - 2x_6 - 4x_7 + 1x_8 - 4x_9 + 5x_{10} \le -36.97343034$$

$$+1x_1 - 2x_2 - 3x_3 - 3x_4 - 3x_5 - 1x_6 + 3x_7 + 4x_8 - 3x_9 \le -75.96442022$$