

Model 9: Investments Maximize the amount of money that can be accumulated by the beginning of year 6

A_1 : dollars invested in activity A in year 1
 A_2 : dollars invested in activity A in year 2
 A_3 : dollars invested in activity A in year 3
 A_4 : dollars invested in activity A in year 4
 B_1 : dollars invested in activity B in year 1
 B_2 : dollars invested in activity B in year 2
 B_3 : dollars invested in activity B in year 3
 C_2 : dollars invested in activity C in year 2
 D_5 : dollars invested in activity D in year 5
 R_1 : dollars not invested in year 1
 R_2 : dollars not invested in year 2
 R_3 : dollars not invested in year 3
 R_4 : dollars not invested in year 4

$$\max 1.40A_4 + 1.70B_3 + 1.90C_2 + 1.30D_5$$

$$\begin{aligned}
 A_1 + B_1 + R_1 &\leq 50000 \\
 -A_1 - B_1 - R_1 &\leq -50000 \\
 A_2 + B_2 + C_2 - R_1 &\leq 0 \\
 -A_2 - B_2 - C_2 + R_1 &\leq 0 \\
 A_3 + B_3 + R_3 - 1.40A_1 - R_2 &\leq 0 \\
 -A_3 - B_3 - R_3 + 1.40A_1 + R_2 &\leq 0 \\
 A_4 + R_4 - 1.40A_2 - 1.70B_1 - R_3 &\leq 0 \\
 -A_4 - R_4 - 1.40A_2 + 1.70B_1 + R_3 &\leq 0 \\
 D_5 - 1.40A_3 - 1.70B_2 - 1.90C_2 - R_4 &\leq 0 \\
 -D_5 + 1.40A_3 + 1.70B_2 + 1.90C_2 + R_4 &\leq 0 \\
 A_1, A_2, A_3, A_4, B_1, B_2, B_3, C_2, D_5, R_1, R_2, R_3, R_4 &\geq 0
 \end{aligned}$$