Original problem

$$\text{Max } Z = 16x_1 + 10x_2 + 4x_4$$

subject to

$$8x_1 + 2x_2 + x_3 + 4x_4 \leq 10$$
$$x_1 + x_2 \leq 1$$
$$x_3 + x_4 \leq 1$$
$$x_j = 0 \text{ or } 1, \ j = 1,2,3,4.$$

Relaxed Problem

$$\text{Max } Z_D(u) = (16 - 8u)x_1 + (10 - 2u)x_2 + (0 - u)x_3 + (4 - 4u)x_4 + 10u$$

subject to

$$x_1 + x_2 \leq 1$$
$$x_3 + x_4 \leq 1$$
$$x_j = 0 \text{ or } 1, \ j = 1,2,3,4.$$

Repeat
   1. Determine an appropriate value of u
   2. Solve $Z_D(u)$ using Gurobi Optimizer
   3. Report the current $Z_D(u)$ and its corresponding objective value Z in
      the original problem
Until certain conditions (e.g. the best $Z_D(u)$ is not improved in 5
consecutive iterations) are met

Report the best (lowest) $Z_D(u)$ and the best (highest) Z you've ever found.