**Problem 1**

30000+15000-20000=25000

30000+15000-20000=25000

30000+15000+16500-16000=45500

**Problem 2**

Let be the binary variable representing whether the photocopier is kept from year I to year j, where

Objective:

Constraints:

**Problem 3**

Let be the amount of sewage flows from node i to node j, where I,j = 1,2,3,4,5,6,7

Objective

Constraints: