1) Heart Start produces automated external defibrillators (AEDs) in each of two different

plants (A and B). The unit production costs and monthly production capacity of the two

plants are indicated in the table below. The AEDs are sold through three wholesalers. The

shipping cost from each plant to the warehouse of each wholesaler along with the

monthly demand from each wholesaler are also indicated in the table. How many AEDs

should be produced in each plant, and how should they be distributed to each of the three

wholesaler warehouses so as to minimize the combined cost of production and shipping?

SOLUTION

We have to create decision variables and dummy variables

We have to find the minimum cost

OBJECTIVE FUNCTION

MIN= 622X1,614X2,630X3,0X4,641Y1,645Y2,649Y3,0Y4))

CONSTRAINTS

X1+X2+X3+X4= 100

Y1+Y2+Y3+Y4 = 120

X1+Y1 =80

X2+Y2 =60

X3+Y3 =70

X4+Y4 =10

SOLUTION USING R

solve(lprec)

[1] 0

> get.objective(lprec)

[1] 132790

> get.constraints(lprec)

[1] 100 120 80 60 70 10

> get.variables(lprec)

[1] 0 60 40 0 80 0 30 10