Assignment 2

X =large, Y= Medium, Z = small

A) The Decision Variables:

The Storage space for each size for X1 , Y1, Z1.
The Production per day X2,Y2,Z2
The Forecast of sales X3,Y3, Z3
Total 9 decision variables

B) LP formulation:

Max P = 420(X1+X2+X3) + 360 (Y1+Y2+Y3)+ 300(Z1+Z2+Z3)

Constraints

X1+Y1+Z1 <=750
X2+Y2+Z2 <=900
X3+Y3+Z3 <=450

Productions :

20X1+15Y1+12Z1<=13000
20X2+15Y2+12Z2<=12000
20X3+15Y3+12Z3<=5000

Storage:

X1+X2+X3 <=900
Y1+Y2+Y3 <= 1200
Z1+Z2+Z3 <=7500

1/750(X1 +Y1+ Z1) – 1/900 (X2+Y2+Z2) = 0
1/750(X1 +Y1+ Z1) – 1/450(X3+Y3+Z3) = 0

Therefore: X1, X2, X3 ,Y1, Y2, Y3, Z1, Z2, Z3 >= 0