Untitled

qmm 1

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install.packages(“lpSolve”)

library(lpSolve)  
#Objective Function   
f.obj <- c(420,360,300,420,360,300,420,360,300)  
  
# Subject to   
# L1 + M1 + S1 < 750   
# L2 + M2 + S2 = 900   
# L3 + M3 + S3 < 450  
  
# 2011 + 15M1 + 1251 < 13000   
# 20L2 + 15M2 + 12S2 = 12000   
#2013 + 15M3 + 12S3 < 5000  
  
#L1 + L2 + L3 < 900   
#M1 + M2 + M3 < 1200   
#S1 + S2 + S3 < 750   
  
 #Non-negativity constraints  
 # L1, L2, L3, M1, M2, M3, S1, S2, S3 > 0   
  
#The above LP problem constraints can be written as:  
#L1 + M1 + S1 +0L2 +0M2 +0S2 + 0L3 + OM3 +0S3 < 750   
#OL1 +0M1 + OS1 + L2 + M2 + S2 +0L3 + OM3 +0S3 < 900  
#OL1 +0M1 +0S1 + 0L2 +0M2 + OS2 + L3 + M3 + S3 < 450  
  
#20L1 + 15M1 + 12S1 +0L2 + 0M2 + OS2 + 0L3 +0M3 +0S3 < 13000   
#OL1 + OM1 + 0S1 + 20L2 + 15M2 + 12S2 + 0L3 + 0M3 + 0S3 < 12000   
#OL1 +0M1 +0S1 +0L2 + 0M2 + OS2 + 20L3 + 15M3 + 12S3 < 5000   
  
#L1 +0M1 +0S1 + L2 +0M2 + OS2 + L3 + OM3 + OS3 < 900  
#OL1 + M1 +0S1 +0L2 + M2 + 0S2 +0L3 + M3 + OS: < 1200  
#OL1 +0M1 + S1 + OL2 + 0M2 + S2 +0L3 +0M3 + S3 < 750  
  
#Constraints   
f.con <- matrix(c(1,1,1,0,0,0,0,0,0,   
 0,0,0,1,1,1,0,0,0,  
 0,0,0,0,0,0,1,1,1,   
 20,15,12,0,0,0,0,0,0,   
 0,0,0,20,15,12,0,0,0,   
 0,0,0,0,0,0,20,15,12,   
 1,0,0,1,0,0,1,0,0,   
 0,1,0,0,1,0,0,1,0,   
 0,0,1,0,0,1,0,0,1), nrow = 9, byrow =TRUE)   
  
#Direction of inequality constraints   
f.dir <- c("<=",   
 "<=",   
 "<=",   
 "<=",   
 "<=",   
 "<=",   
 "<=",   
 "<=",   
 "<=")   
  
#Right hand side coefficients   
f.rhs <- c(750,900,450,13000, 12000,5000,900, 1200,750)   
  
# Objective value   
lp("max", f.obj, f.con, f.dir, f.rhs)

## Success: the objective function is 708000

#Values of the variables   
lp("max", f.obj, f.con, f.dir, f.rhs) $solution

## [1] 350.0000 400.0000 0.0000 0.0000 400.0000 500.0000 0.0000 133.3333  
## [9] 250.0000