QMM Assignment 2

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#Installed the library lpsolve
library(lpSolve)

#Objective function
f.objective=c(420,360,300,
              420,360,300,
              420,360,300)

#Subject to restrictions:
STR=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)

#Defining the direction of inequality constraints:
signs=c("<=","<=","<=","<=","<=","<=","<=","<=","<=")

#Setting up the right hand side values:
rhs=c(750,900,450,13000,12000,5000,900,1200,750)

#Value of Z:
lp("max", f.objective, STR, signs, rhs)
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## Success: the objective function is 708000
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#Final Soultion:
lp("max", f.objective, STR, signs, rhs)$solution
```

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