

# QMM Assignment 2

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LP Model using R

```
#Installing the lpSolve library  
library(lpSolve)
```

```
## Warning: package 'lpSolve' was built under R version 4.2.3
```

```
# Set Objective function  
func.objective <- c(420,360,300,  
                    420,360,300,  
                    420,360,300)
```

```
#Set the Constraints  
func.constraints <-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)
```

```
#Set the direction of the inequalities  
func.dir<-c("<=",  
            "<=",  
            "<=",  
            "<=",  
            "<=",  
            "<=",  
            "<=",  
            "<=")
```

```
#Set the right hand side coefficients  
func.righthandside<-c(750,  
                      900,  
                      450,  
                      13000,  
                      12000,
```

```
5000,  
900,  
1200,  
750)
```

```
#Find the value of the objective function(Z)
```

```
lp("max",func.objective,func.constraints,func.dir,func.righthandside)
```

```
## Success: the objective function is 708000
```

```
#Values of the variables
```

```
lp("max", func.objective, func.constraints, func.dir, func.righthandside)$solution
```

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

```
## [9] 250.0000
```