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>#Author: Sam Kirchner
>#Importing the package
>library('lpSolve')

>#Defining the matrices for the objective function,
>#the functional constraints and the right-hand side (rhs).
>f.obj<-c(3, 2, 1.4, 2.2, 5, 2.8)
>f.con<-matrix(c(1, 1.5, 3, -1, 0, 2, 2, 0, 4, 3, 5.3, 1, 2.9, 2, -2,
4, 1, 0, 0, 3, 2.6, 4, 3.1, 0, 1.5, -.5, 0, 2, 1, 0),nrow=5,byrow=T)
>f.con
 [,1] [,2] [,3] [,4] [,5] [,6]
[1,]  1.0  1.5  3.0   -1  0.0    2
[2,]  2.0  0.0  4.0    3  5.3    1
[3,]  2.9  2.0 -2.0    4  1.0    0
[4,]  0.0  3.0  2.6    4  3.1    0
[5,]  1.5 -0.5  0.0    2  1.0    0

>f.rhs<-c(20.3, 14, 11.8, 12, 14.6)

>#Vector of directions for the functional constraints:
>f.dir<-rep('<=',5)

>#Call the linear programming package
>soln<-lp('max',f.obj,f.con,f.dir,f.rhs)
>soln
Success: the objective function is 34.31194

>#To get the optimal solution, use soln$solution.
>soln$solution
[1] 1.5814579 3.2383418 0.0000000 0.0000000 0.7370886 6.9305147

>#Vector of directions for the new functional constraints:
>f.dir<-c('>=','<=','<=','<=','<=')

>#Call the linear programming package with the updated vector of
directions
>soln<-lp('max', f.obj, f.con, f.dir, f.rhs)
>soln
Success: the objective function is 47.2

>soln$solution
[1]  0  4  0  0  0 14
```