**Practical no.2**

**Solution of LPP by graphical method**

install.packages(“lpSolve”)

library(lpSolve)

obj=c(10,12)

con=matrix(c(2,1,1,2),nrow=2,byrow=T)

dir=c("<=","<=")

rhs=c(104,76)

max\_z=lp("max",obj,con,dir,rhs)

max\_z

x=lp("max",obj,con,dir,rhs)$solution

x

#2

obj=c(40,30)

con=matrix(c(3,1,1,0,0,1),nrow=3,byrow=T)

dir=c("<=","<=","<=")

rhs=c(30000,8000,12000)

max\_z=lp("max",obj,con,dir,rhs)

max\_z

x=lp("max",obj,con,dir,rhs)$solution

x

#3

obj=c(2,3)

con=matrix(c(1,1,2,1),nrow=2,byrow=T)

dir=c(">=","<=")

rhs=c(350,600)

max\_z=lp("min",obj,con,dir,rhs)

max\_z

x=lp("min",obj,con,dir,rhs)$solution

x

#4

obj=c(1,1)

con=matrix(c(-2,1,1,1),nrow=2,byrow=T)

dir=c("<=","<=")

rhs=c(1,3)

max\_z=lp("max",obj,con,dir,rhs)

max\_z

x=lp("max",obj,con,dir,rhs)$solution

x

#5

obj=c(20,40)

con=matrix(c(6,1,1,4),nrow=2,byrow=T)

dir=c(">=",">=")

rhs=c(18,12)

max\_z=lp("min",obj,con,dir,rhs)

max\_z

x=lp("min",obj,con,dir,rhs)$solution

x

#6

obj=c(3,-2)

con=matrix(c(1,1,2,3),nrow=2,byrow=T)

dir=c("<=",">=")

rhs=c(1,4)

max\_z=lp("max",obj,con,dir,rhs)

max\_z

x=lp("max",obj,con,dir,rhs)$solution

x