```
#ERIC AGYEMANG
#MAT 455 HOME WORK 6
#question 3.64
# The transition Matrix for Forest ecosystems
mat<-matrix(c(0.74,
0.26,0,0,0,0,0,0,0,0,0,0,0.11,0.6,0.28,0.01,0,0,0,0,0,0,0,0.04,0.18,0.57,0.2,0.01,0,0,0,0,0,0,0.02,0.04,0.18,0.52,0.22,0.02,0,0,0,0,0,0.01,0.08,0.23,0.48,0.17,0.02,0.01,0,0,0,0,0.01,0

mat
#Make state 12 an absorbing State.
new_mat<-mat[c(1,2,3,4,5,6,7,8,9,10,11),]
new_mat<-new_mat[,c(1,2,3,4,5,6,7,8,9,10,11)]
new_mat
I<-diag(11)
F=inv(I-new_mat)
rsum<-c()
for(i in 1:11){rsum[i]=sum(F[i])}
# total number of steps to state 12 from state 1 to 11
rsum
ans<-rsum[1]*5
ans

#54108.4
```