Part b

statespace<-c(1,2,3)

P <- matrix(data = c(1/3, 1/3, 1/3, 1/3, 1/3, 1/3, 1/5, 1/5, 3/5), nrow = 3, ncol = 3,

byrow = TRUE)

n=5000

xi1 = 0

xi2 = 0

xi3 = 0

ind<-matrix(data = c(0, 0, 0), nrow = 1, ncol = 3, byrow = TRUE)

for(i in 1:n) {

x=1

for (j in 1:2){

for(k in 1:3){

if(x==k)

x = sample(statespace, size = 1 , replace = FALSE, prob = P[k,])

}

}

for(t in 1:3)

if (x == t) {

ind[,t] = ind[,t] + 1

}

}

for(t in 1:3){

print(ind[,t]/n)

}

Part c

statespace<-c(1,2,3)

P <- matrix(data = c(1/3, 1/3, 1/3, 1/3, 1/3, 1/3, 1/5, 1/5, 3/5), nrow = 3, ncol = 3,

byrow = TRUE)

n=5000

xi1 = 0

xi2 = 0

xi3 = 0

ind<-matrix(data = c(0, 0, 0), nrow = 1, ncol = 3, byrow = TRUE)

for(i in 1:n) {

x=1

for (j in 1:20){

for(k in 1:3){

if(x==k)

x = sample(statespace, size = 1 , replace = FALSE, prob = P[k,])

}

}

for(t in 1:3)

if (x == t) {

ind[,t] = ind[,t] + 1

}

}

for(t in 1:3){

print(ind[,t]/n)

}