Discussion 10 - Markov Chains

sufian

3/28/2020

## Intro to Probabilities page 451

Chapter 11.4 Exercise 1

* Compute Py, P2y, and P4y and show that the results are approaching a constant vector. What is this vector?

ans:

The vector approaches {0.33,0.33}

library(matlib)  
library(MASS)   
p<- matrix(c(0.5, 0.5, 0.25, 0.75), nrow = 2, ncol = 2, byrow=T)  
p

## [,1] [,2]  
## [1,] 0.50 0.50  
## [2,] 0.25 0.75

y <- matrix(c(1,0), nrow=2,ncol=1, byrow=T)  
y

## [,1]  
## [1,] 1  
## [2,] 0

p %\*% y

## [,1]  
## [1,] 0.50  
## [2,] 0.25

psquare <- p %\*% p  
  
psquare %\*% y

## [,1]  
## [1,] 0.3750  
## [2,] 0.3125

pto4 <- psquare %\*% psquare  
  
pto4 %\*% y

## [,1]  
## [1,] 0.3359375  
## [2,] 0.3320312

pto16 <-pto4%\*% pto4  
  
pto16 %\*% y

## [,1]  
## [1,] 0.3333435  
## [2,] 0.3333282