

# Assignment 7

**Assumptions** - Observed data is of 2 dimensions and theta is of 5 dimensions

**Input -**

**Prior density function -**

```
prior <- function(x)
{
  m<-c(1,1,1,1,1)
  c <-0.5*diag(5)
  pd<-dmvnorm(x,m,c,log = FALSE)
  return(pd)
}
```

```
calculate_mcmc(prior,mvrnorm(10,c(5,5),diag(2)),c(1,2,3,4,5))
```

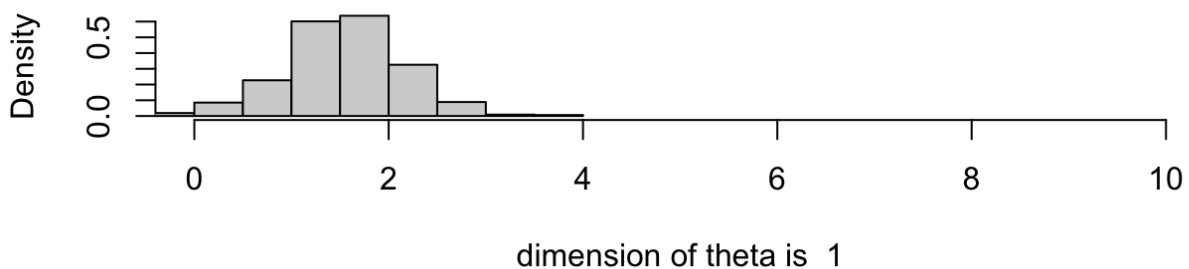
**Output -**

final 5 theta points are

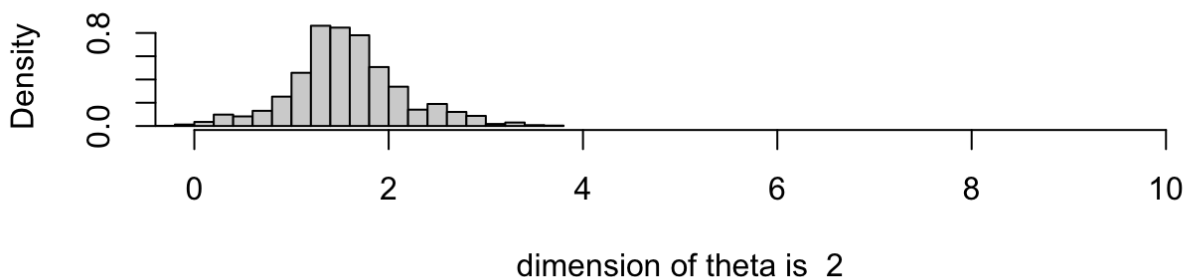
	[,1]	[,2]	[,3]	[,4]	[,5]
x	2.1644344	1.4781777	1.9706282	1.4554531	1.9032819
x	2.1644344	1.4781777	1.9706282	1.4554531	1.9032819
x	1.9094191	1.3976116	2.1194925	1.4608838	2.0437496
x	1.9094191	1.3976116	2.1194925	1.4608838	2.0437496
x	1.9094191	1.3976116	2.1194925	1.4608838	2.0437496

Plots:

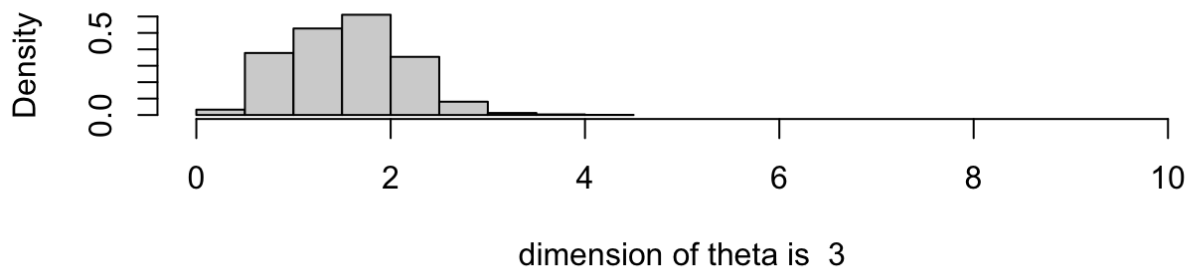
**Histogram of values of theta visited by MCMC algorithm**



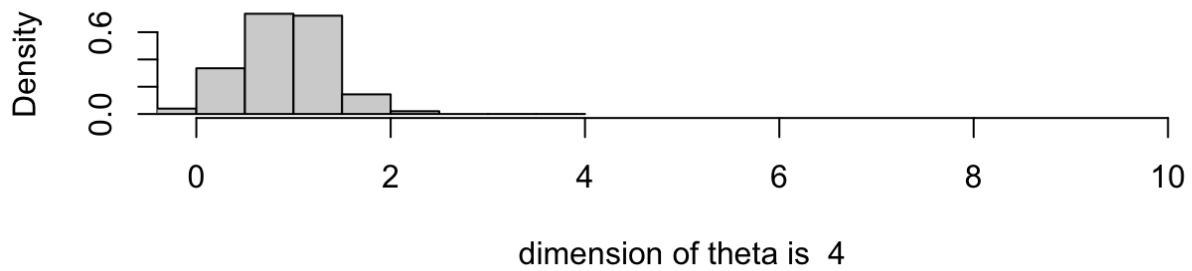
**Histogram of values of theta visited by MCMC algorithm**



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