

#my r-code

```
n <- c(5, 50, 200, 500)
```

```
r <- 500
```

```
xbar <- rep(0, r)
```

```
par(mfrow=c(2, 2))
```

```
for (i in 1:4)
```

```
{
```

```
  for (j in 1:r)
```

```
  {
```

```
    xbar[j] = mean(sample(6,n[i],replace=TRUE))
```

```
  }
```

```
plot(density(xbar), main=paste("Sample size=", n[i]), xlim=c(0, 6)
```

```
      , ylim = c(0, 5), lty=2)
```

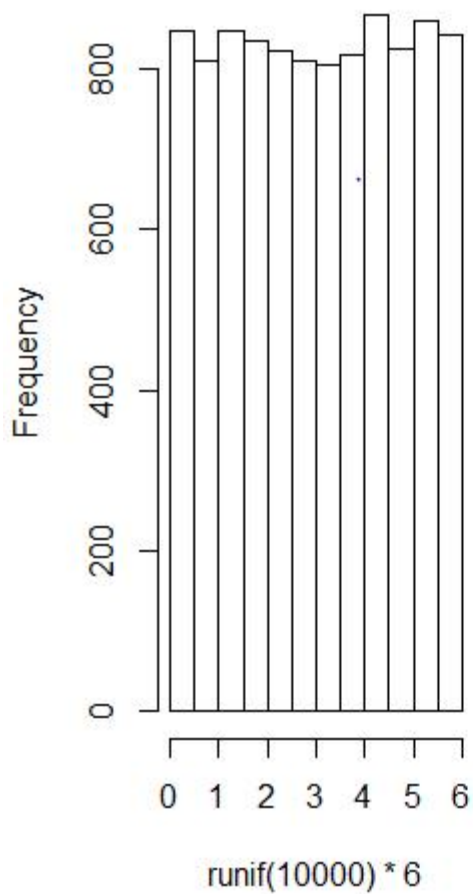
```
par(new=T)
```

```
mean = 3.5
```

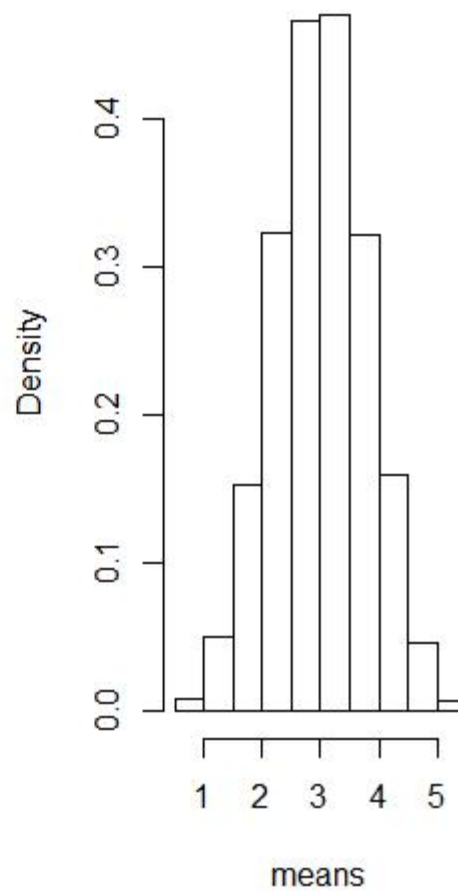
```

curve(dnorm(x, mean=mean), xlim=c(0, 6), ylim=c(0, 1))
}

```



**Histogram of means**



```

#class r-code
hist(runif(10000)*6,main="")
means = numeric(10000)
for (i in 1: 10000) {
  means[i] = mean(runif(5)*6)
}
hist(means,freq=FALSE)
mean(means)
sd(means)
xv=seq(0,6,0.1)

```

```
yv = dnorm(xv, mean=mean(means), sd=sd(means))  
lines(xv,yv)
```