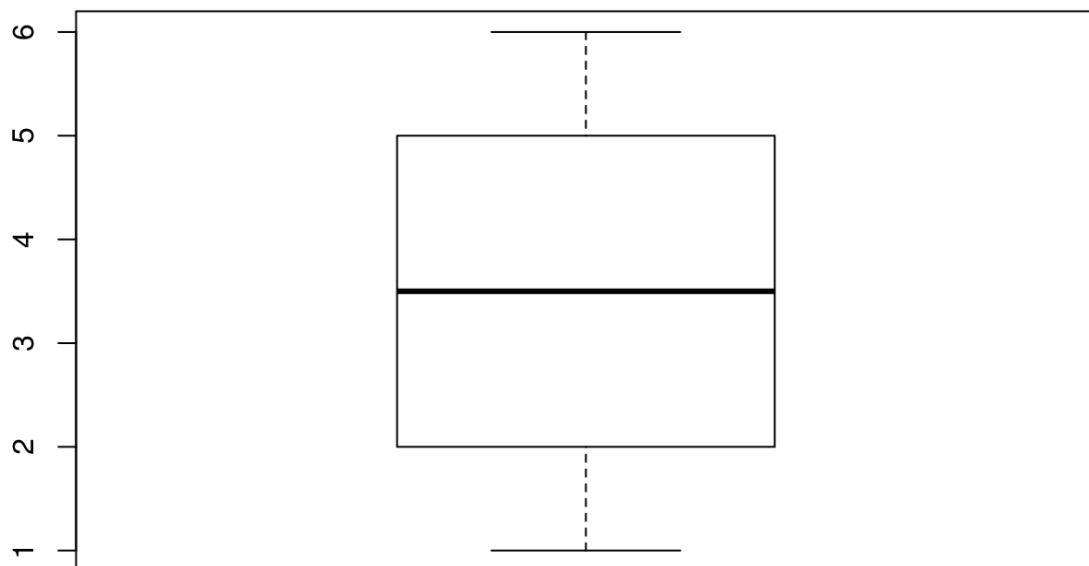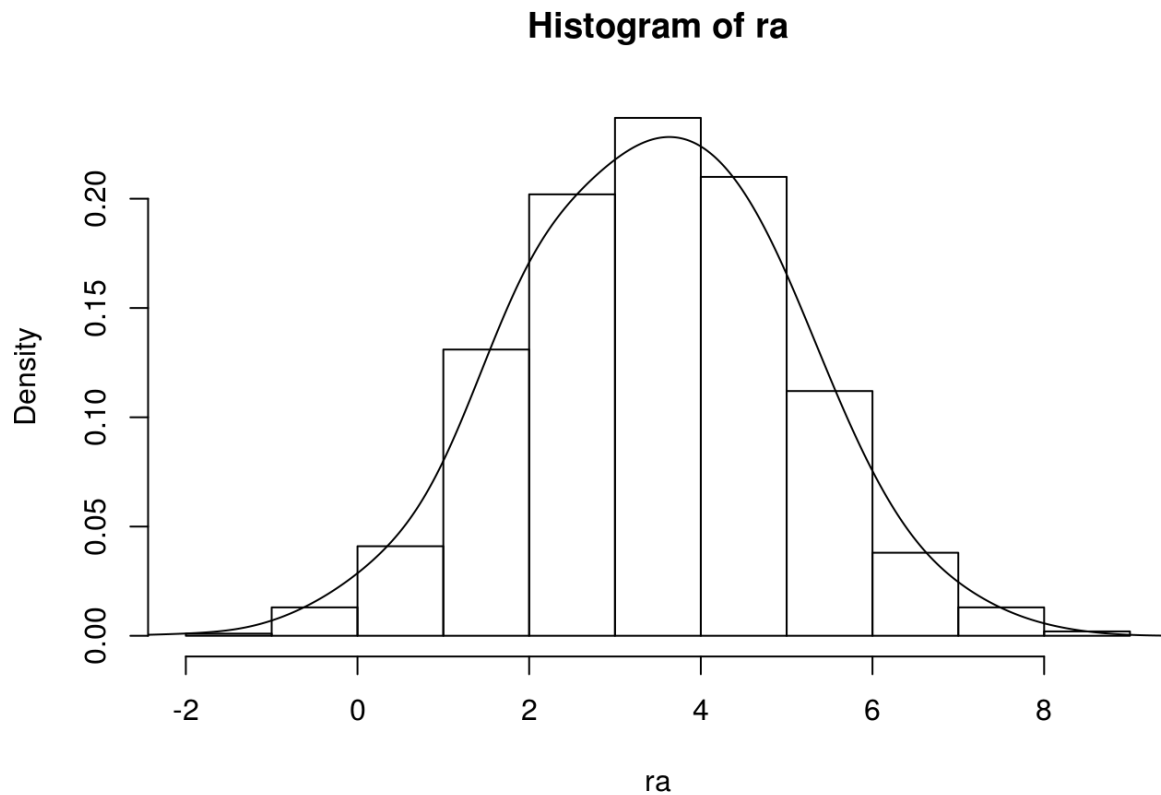# basic_statistics

Normal Distribution

```
a <- sample(1:6, size = 20, replace = TRUE) # Create a sample (dieroll)
ma <- mean(a) # check the mean of sample
sda <- sd(a) # check the standard deviation
boxplot(a)
```



```
ra <- rnorm(1000, mean = ma, sd = sda) #random normal distribution
hist(ra, prob=TRUE)
lines(density(ra, adjust = 1.5)) #adjust the line
```

Histogram of ra

Inference for a single population

Inference is answering questions about population parameters based on a sample. The mean of a random sample from a population is an estimate of the population mean. Since it is a single number it is called a point estimate. It is often desirable to estimate a range within which the population parameter lies with high probability. This is called a confidence interval.

One way to get confidence intervals in R is to use the quantile functions for the relevant distribution.