Numerical Measures

mean:

```
duration = faithful$eruptions    # the eruption durations
mean(duration)                   # apply the mean function
duration = faithful$eruptions    # the eruption durations
median(duration)                 # apply the median function
```

[1] 4

```
duration = faithful$eruptions    # the eruption durations
quantile(duration)               # apply the quantile function
```

```
   0%   25%   50%   75%  100%
1.6000 2.1627 4.0000 4.4543 5.1000
```

Percentile

```
duration = faithful$eruptions    # the eruption durations
quantile(duration, c(.32, .57, .98))
```

```
  32%   57%   98%
2.3952 4.1330 4.9330
```

Range

```
duration = faithful$eruptions    # the eruption durations
max(duration) – min(duration)    # apply the max and min functions
```

[1] 3.5

Interquartile Range

```
duration = faithful$eruptions    # the eruption durations
IQR(duration)                    # apply the IQR function
```

[1] 2.2915

```
duration = faithful$eruptions      # the eruption durations
boxplot(duration, horizontal=TRUE)  # horizontal box plot
```

```
duration = faithful$eruptions    # the eruption durations
var(duration)                    # apply the var function
```

[1] 1.3027

```
duration = faithful$eruptions    # the eruption durations
sd(duration)                     # apply the sd function
```

[1] 1.1414

```
duration = faithful$eruptions   # eruption durations
waiting = faithful$waiting      # the waiting period
cov(duration, waiting)          # apply the cov function
```

[1] 13.978

```
duration = faithful$eruptions   # eruption durations
```

```
waiting = faithful$waiting     # the waiting period

cor(duration, waiting)         # apply the cor function

[1] 0.90081
```

Central Moment

```
library(e1071)                 # load e1071

duration = faithful$eruptions  # eruption durations

moment(duration, order=3, center=TRUE)

[1] -0.6149
```

Skewness

```
library(e1071)                 # load e1071

duration = faithful$eruptions  # eruption durations

skewness(duration)             # apply the skewness function

[1] -0.41355
```

Kurtosis

```
library(e1071)                 # load e1071

duration = faithful$eruptions  # eruption durations

kurtosis(duration)             # apply the kurtosis function

[1] -1.5116
```

Box Plot

The **box plot** of an observation variable is a graphical representation based on its quartiles, as well as its smallest and largest values. It

attempts to provide a visual shape of the data distribution. You can observe the 4 quartiles and dark vertical line represents the median. Find the shorter and longer distances for bunched data and spread data.