Lab 1

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##Setup

```
x <- c(0,1,2,3,4,5,6,7,8,9,10)
y <- c(2.96, 4.20, 2.84, 3.84, 6.57, 6.95, 9.32, 10.57, 9.72, 11.57, 11.53)

tree_data <- data.frame(height=x,diameter=y)
```

Question 1

```
#a
mean(tree_data$height)
```

```
## [1] 5
```

```
mean(tree_data$diameter)
```

```
## [1] 7.279091
```

```
#b
quantile(tree_data$height,probs=0.5)
```

```
## 50%
##   5
```

```
quantile(tree_data$diameter,probs=0.5)
```

```
##  50%
## 6.95
```

a) the mean tree height is 5m. The mean tree diameter is 7cm.

b) the median tree height is 5m. The median tree diameter is 7cm.

Question 2

```
# a)
range(tree_data$height)
```

```
## [1]  0 10
```

```
range(tree_data$diameter)
```

```
## [1]  2.84 11.57
```

```
max(tree_data$diameter)-min(tree_data$diameter)
```

```
## [1] 8.73
```

a) The range of the tree height is 10m from 0m to 10m. the range of tree diameter is 8.73cm from 2.84cm to 11.57cm.

```
# b)

var(tree_data$height)
```

```
## [1] 11
```

```
var(tree_data$diameter)
```

```
## [1] 11.77149
```

b) The variance in tree height is 11 square meters. The variance in tree diameter is 11.77 square centimeters

```
# c)

sd(tree_data$height)
```

```
## [1] 3.316625
```

```
sd(tree_data$diameter)
```

```
## [1] 3.43096
```

c) The standard deviation of tree height is 3.31m. The standard deviation of tree diameter is 3.43cm.