

MATH40005 Problem Sheet 11 Week 21

Florence Nightingale, CID: 12345678

Question 2

This question reads in and plots the data contained in `shoesizes.txt`.

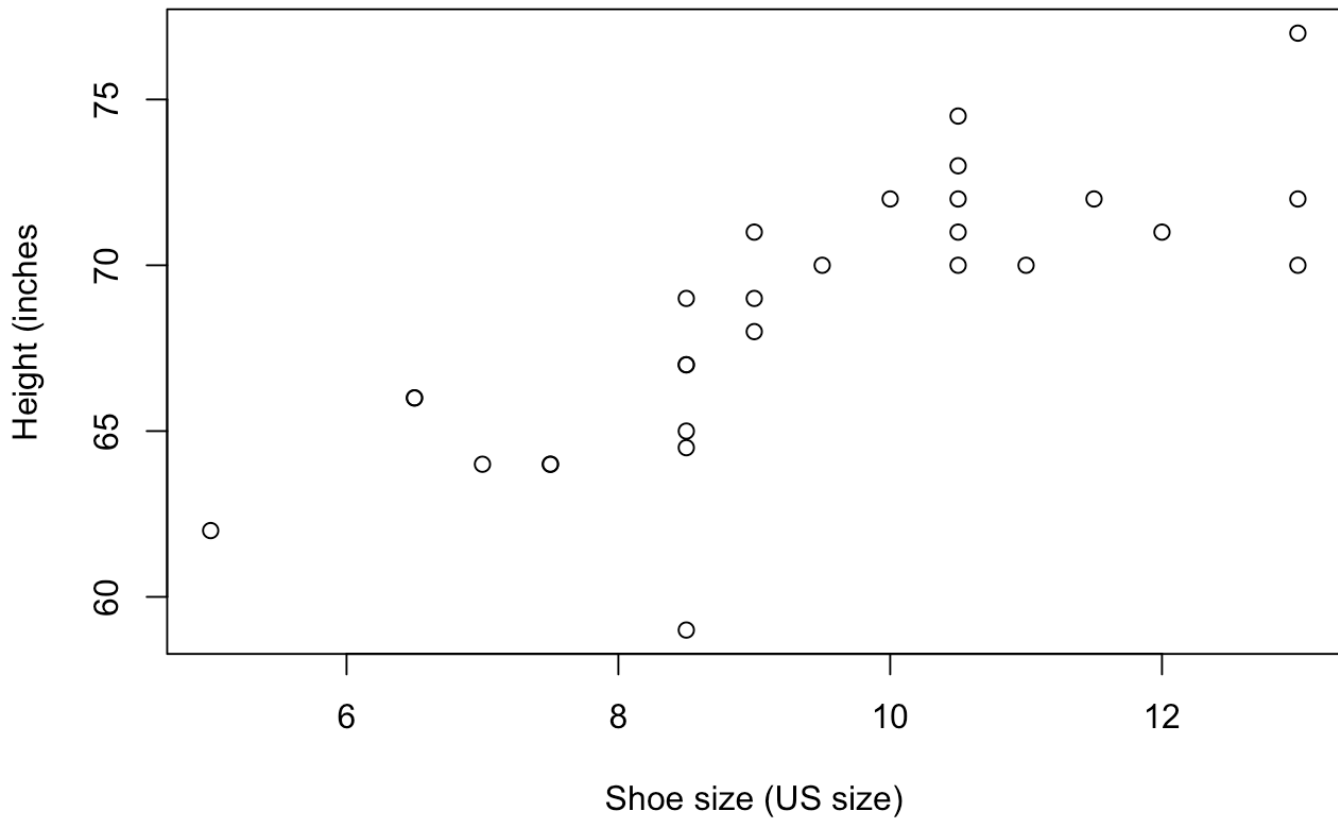
```
# read in the data
df <- read.table("shoesizes.txt", sep=",", header=TRUE)

# print the first five lines of the data
print(head(df))
```

```
##   shoe.size height gender
## 1      6.5   66.0      F
## 2      9.0   68.0      F
## 3      8.5   64.5      F
## 4      8.5   65.0      F
## 5     10.5   70.0      M
## 6      7.0   64.0      F
```

```
# extract the columns of data to separate vectors
shoesize <- df$shoe.size
height <- df$height

# plot a scatterplot of the data
plot(x=shoesize, y=height, type='p', xlab="Shoe size (US size)", ylab="Height (inches)")
```



```
cor_inches <- cor(shoesize, height)
cat("The covariance of the shoes sizes and heights (in inches) is: ", cor_inches,
"\n")
```

```
## The covariance of the shoes sizes and heights (in inches) is: 0.7766089
```

```
height_in_cm <- height * 2.54
cor_cm <- cor(shoesize, height_in_cm)
cat("The covariance of the shoes sizes and heights (in cm) is: ", cor_cm, "\n")
```

```
## The covariance of the shoes sizes and heights (in cm) is: 0.7766089
```