

```
install.packages('tidyverse')
```

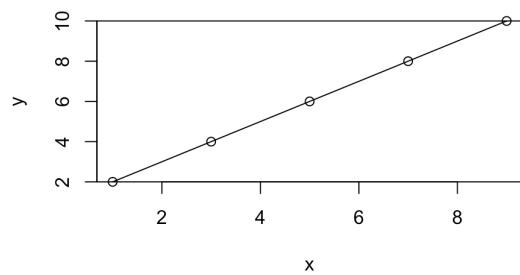
```
library(tidyverse)
```

```
x <- c(1, 3, 5, 7, 9)
```

```
y <- c(2, 4, 6, 8, 10)
```

```
plot(x, y)
```

```
lines(x, y)
```



```
z = rnorm(1000)
```

```
w = rnorm(1000)
```

```
library(car)
```

```
some(z)
```

```
[1] -0.6894683 -1.9442894 -0.4425694
```

```
[4]  0.4554776 -0.2892876  1.2126798
```

```
[7] -1.6204009  0.9569294  1.1392908
```

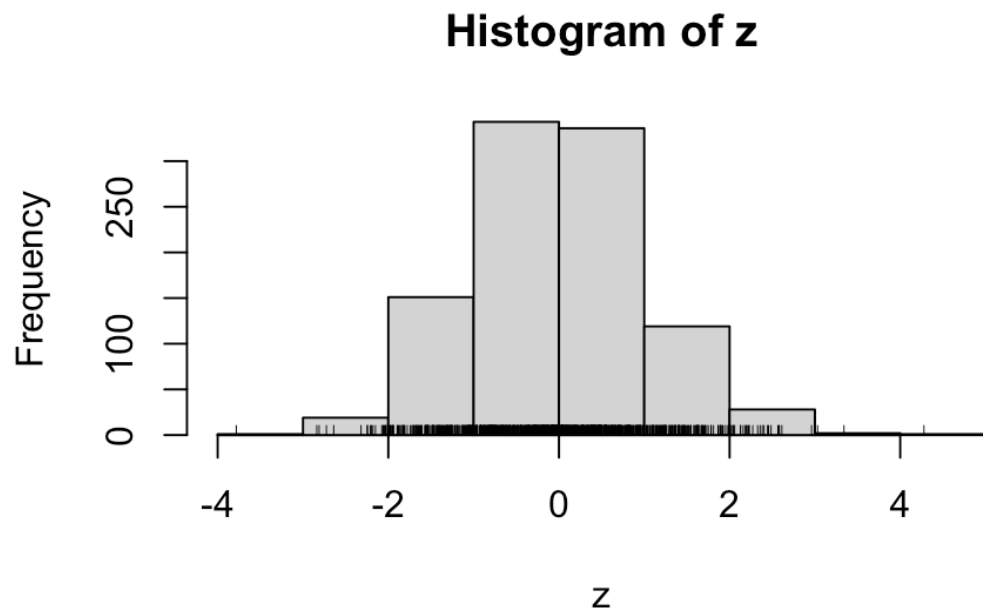
```
[10]  0.3170466
```

```
plot(z)
```

```
lines(z)
```

```
hist(z)
```

```
rug(z)
```



```
library(HistData)
```

```
some(Galton)
```

```
attach(Galton)
```

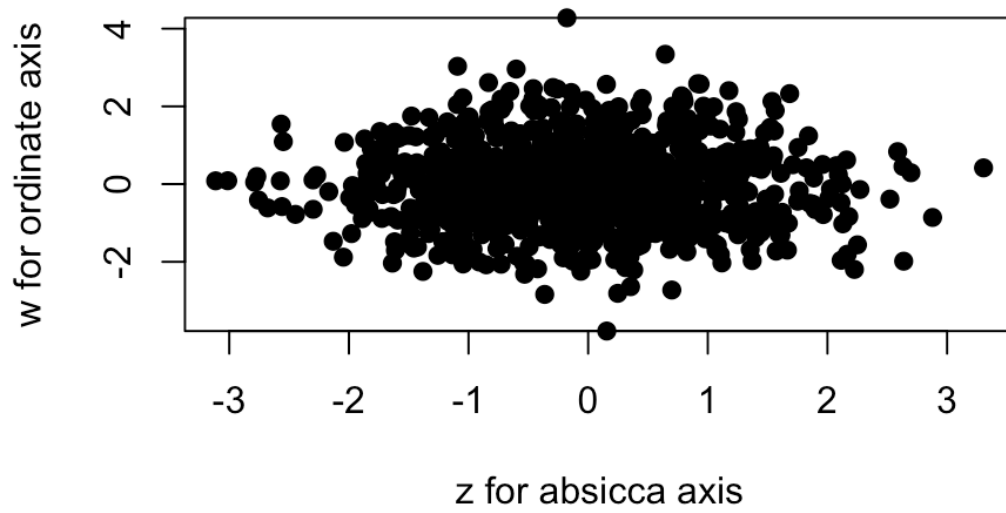
```
hist(parent)
```

```
hist(parent, main = 'Histogram of parent height')
```

```
plot(w,z)
```

```
plot(w, z, main = "Plot of W and Z", xlab="z for absicca axis", ylab="w for ordinate  
axis", pch = 19)
```

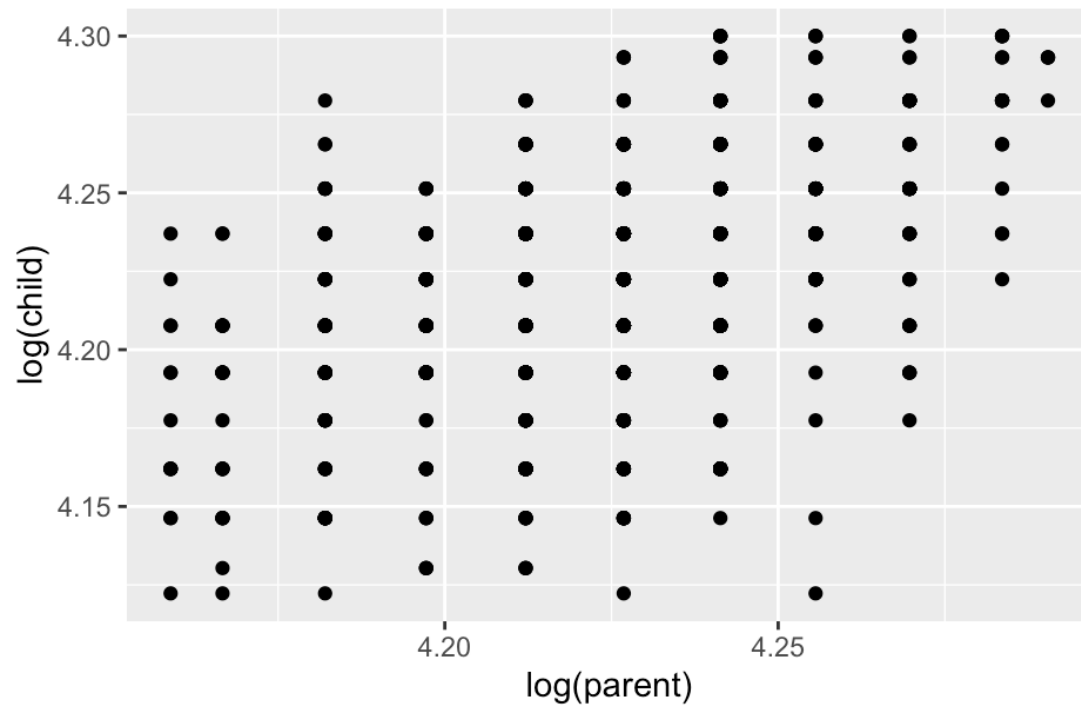
Plot of W and Z



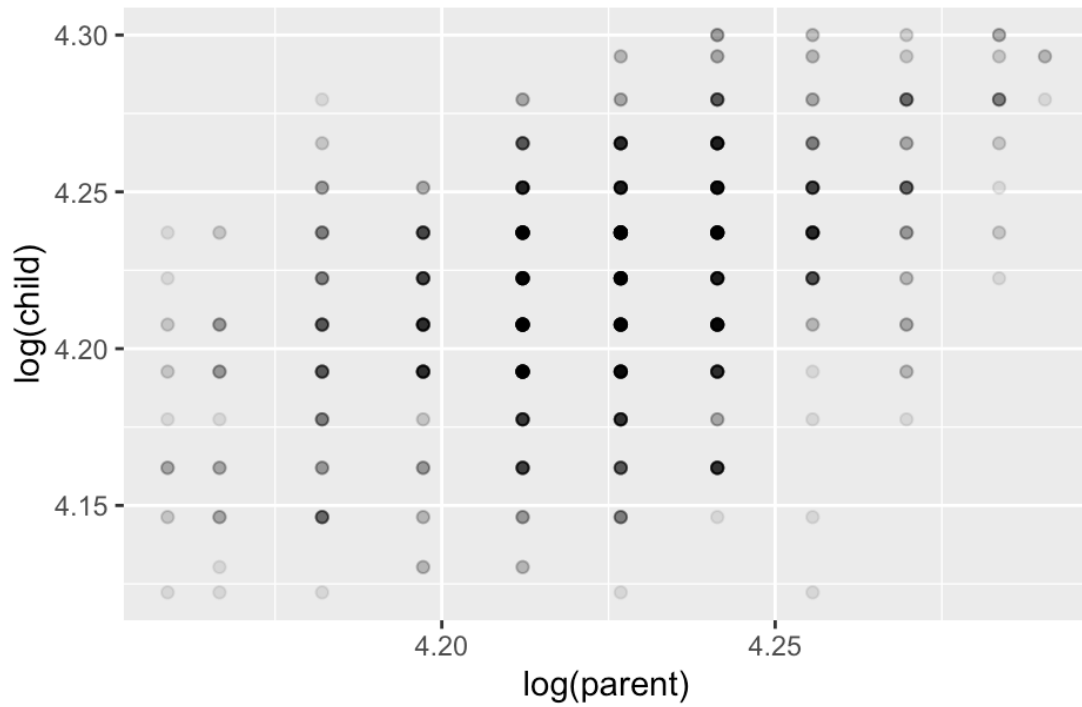
```
plot(child, parent)
```

```
sunflowerplot(parent ~ child)
```

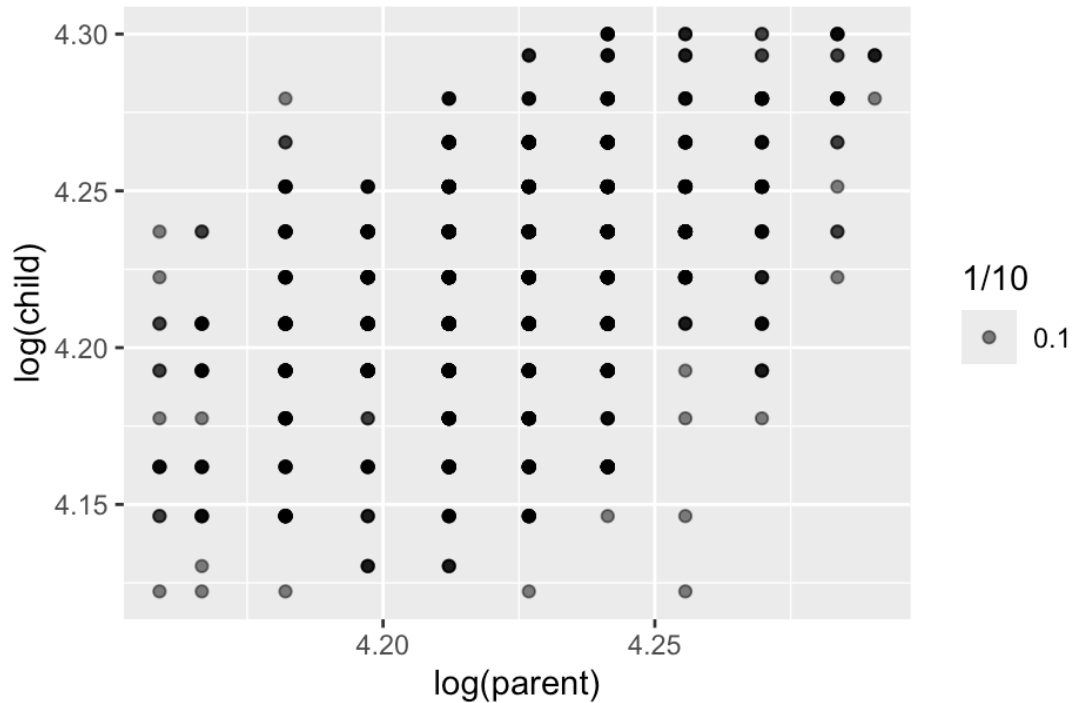
```
qplot(log(parent), log(child))
```



```
qplot(log(parent), log(child), alpha = I(1/10))
```

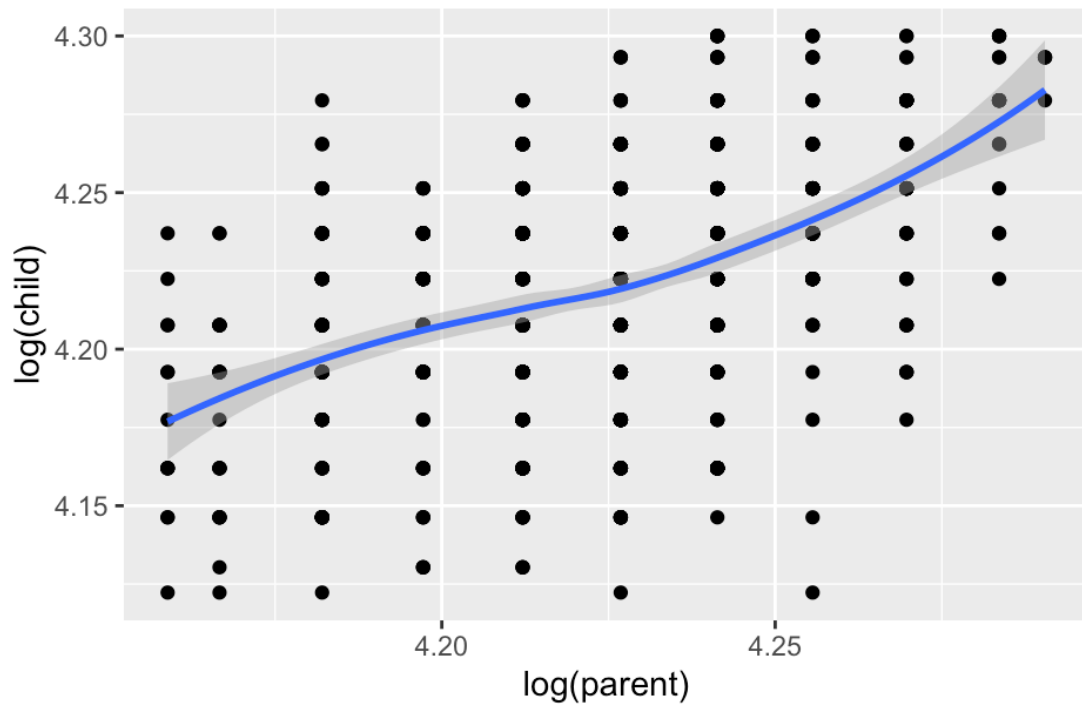


```
qplot(log(parent), log(child), alpha = 1/10)
```

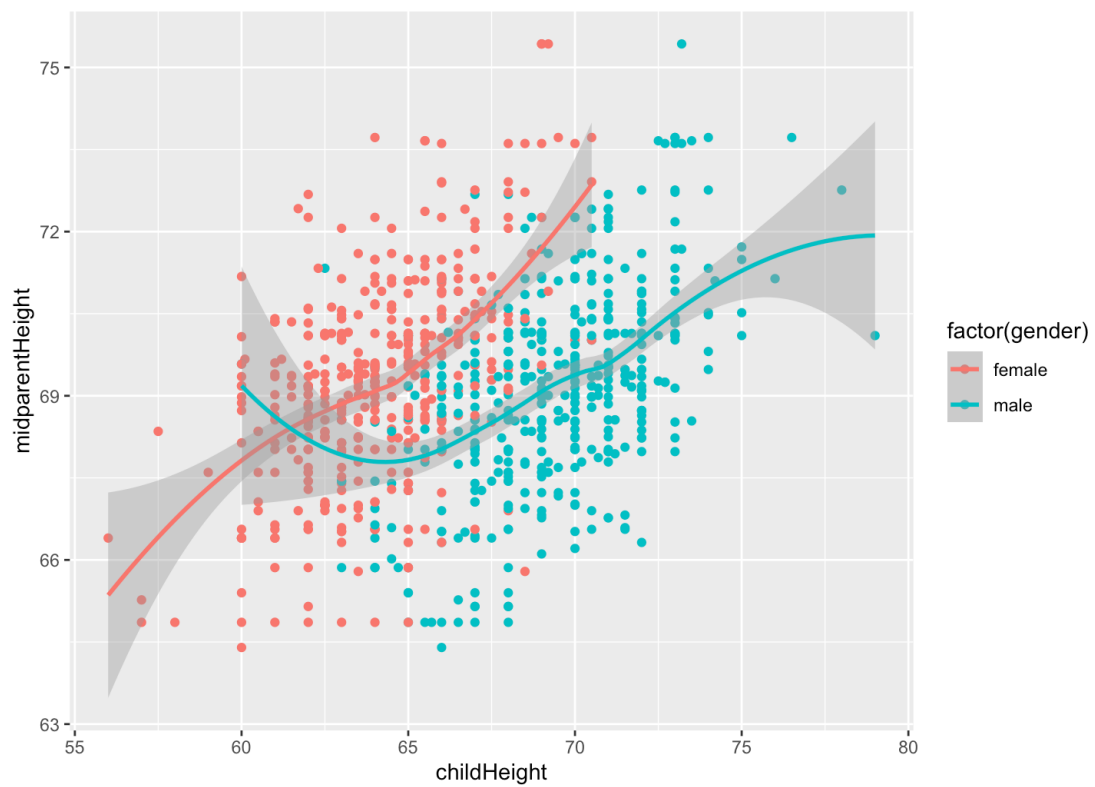


```
qplot(log(parent), log(child), geom = c("point", "smooth"))
```

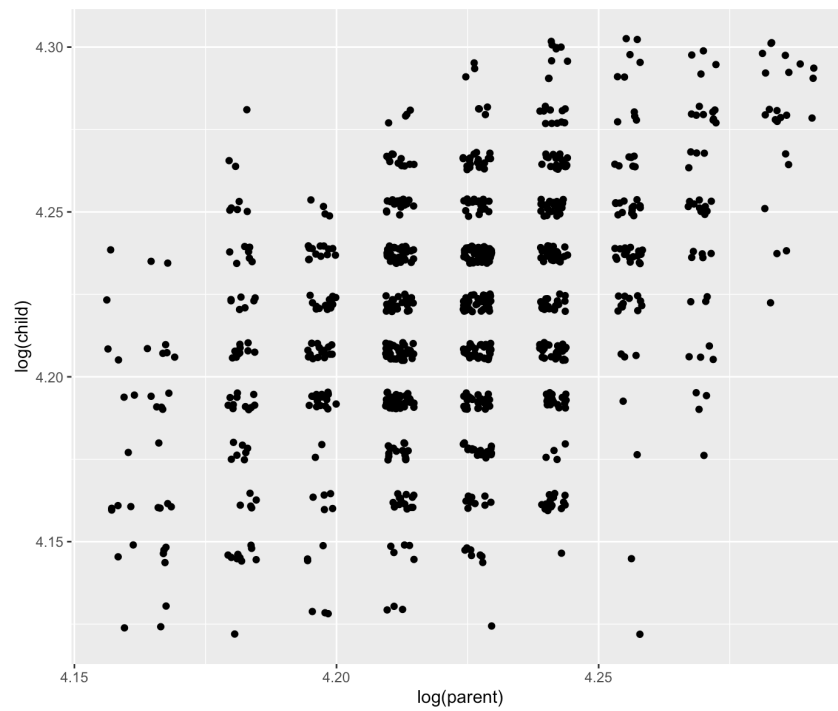
```
`geom_smooth()` using method = 'loess' and formula 'y ~ x'
```



```
qplot(childHeight, midparentHeight, data = GaltonFamilies, color =
factor(gender), geom = c("point", "smooth"))
```



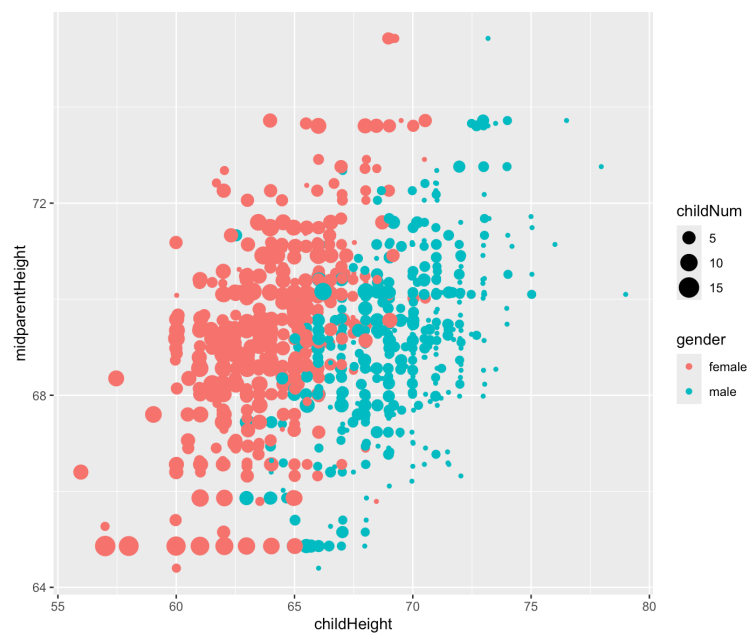
```
qplot(log(parent), log(child), geom = "jitter")
```



```
attach(GaltonFamilies)
```

```
g <- ggplot(GaltonFamilies, aes(childHeight, midparentHeight))
```

```
g + geom_jitter(aes(col = gender, size = childNum))
```



```
attach(faithful)
```

```
stem(eruptions)
```

The decimal point is 1 digit(s) to the left of the |

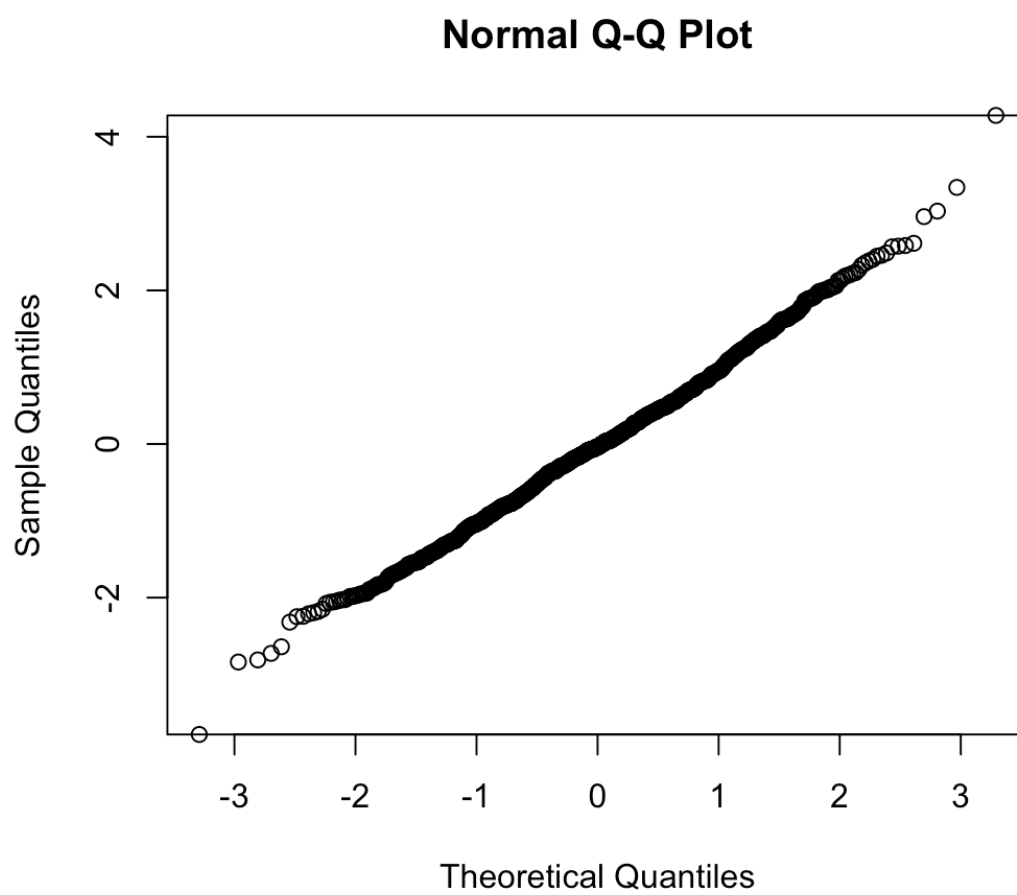
16 | 070355555588

18 | 00002223333333557777777888822335777888

20 | 00002223378800035778

22 | 0002335578023578

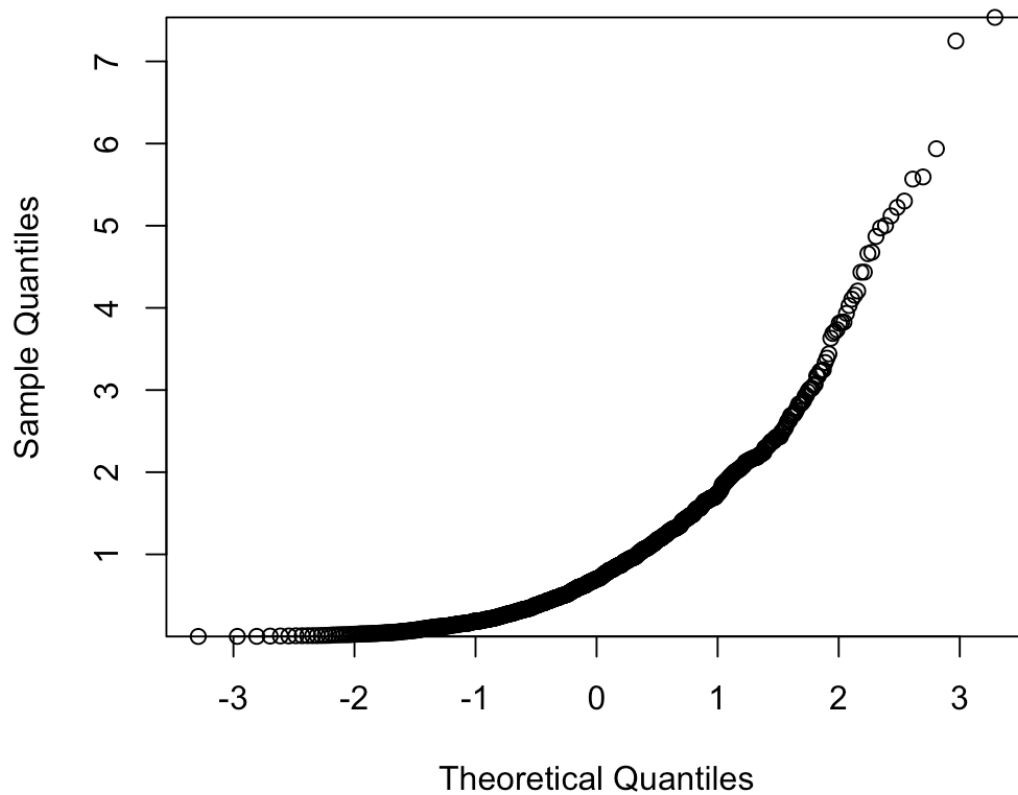
qqnorm(z)



x = rexp(1000)

qqnorm(x)

Normal Q-Q Plot



```
shapiro.test(z)
```

Shapiro-Wilk normality test

data: z

W = 0.99684, p-value =

0.04395

```
shapiro.test(eruptions)
```

Shapiro-Wilk normality test

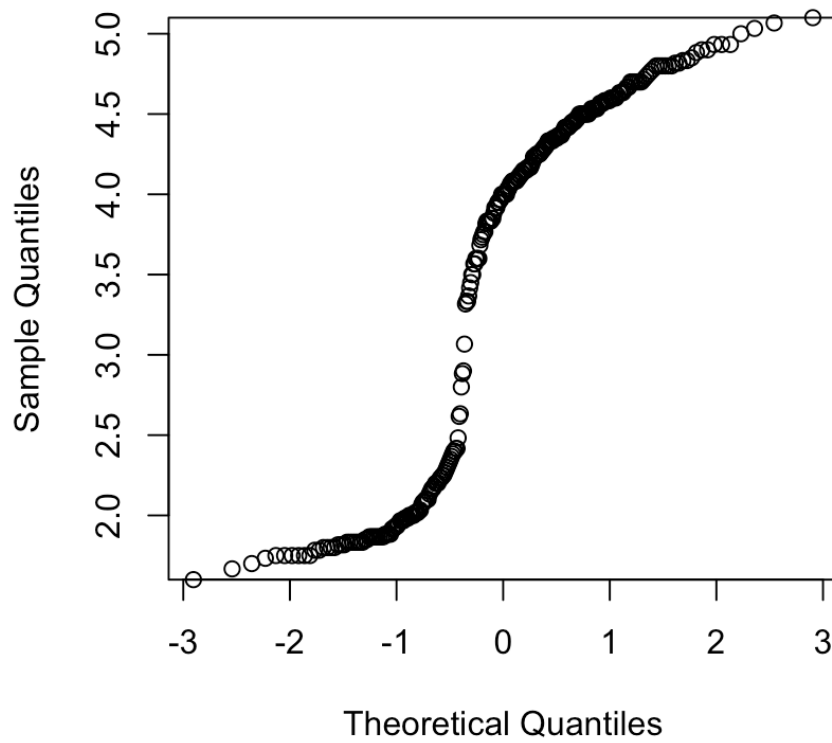
data: eruptions

W = 0.84592, p-value =

9.036e-16

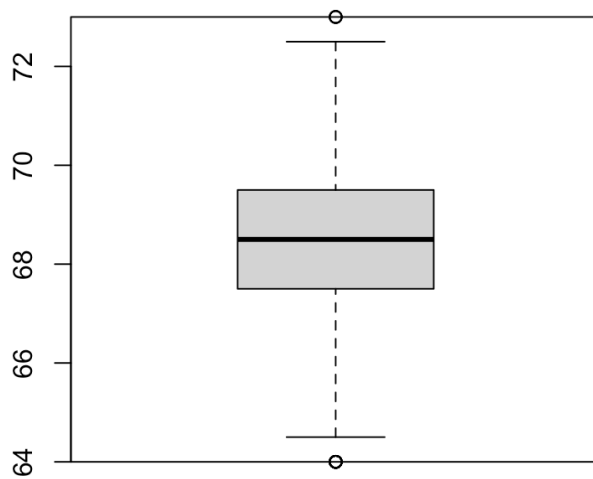
```
qqnorm(eruptions)
```


Normal Q-Q Plot



```
boxplot(parent, main = "Boxplot of Parent Height")
```

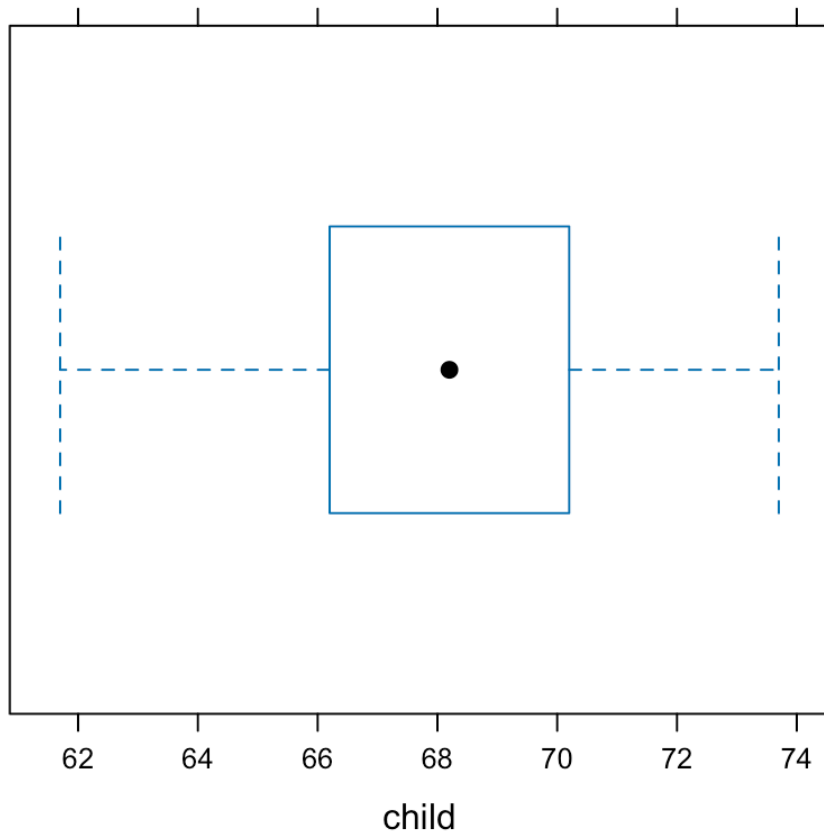
Boxplot of Parent Height



```
library(lattice)
```

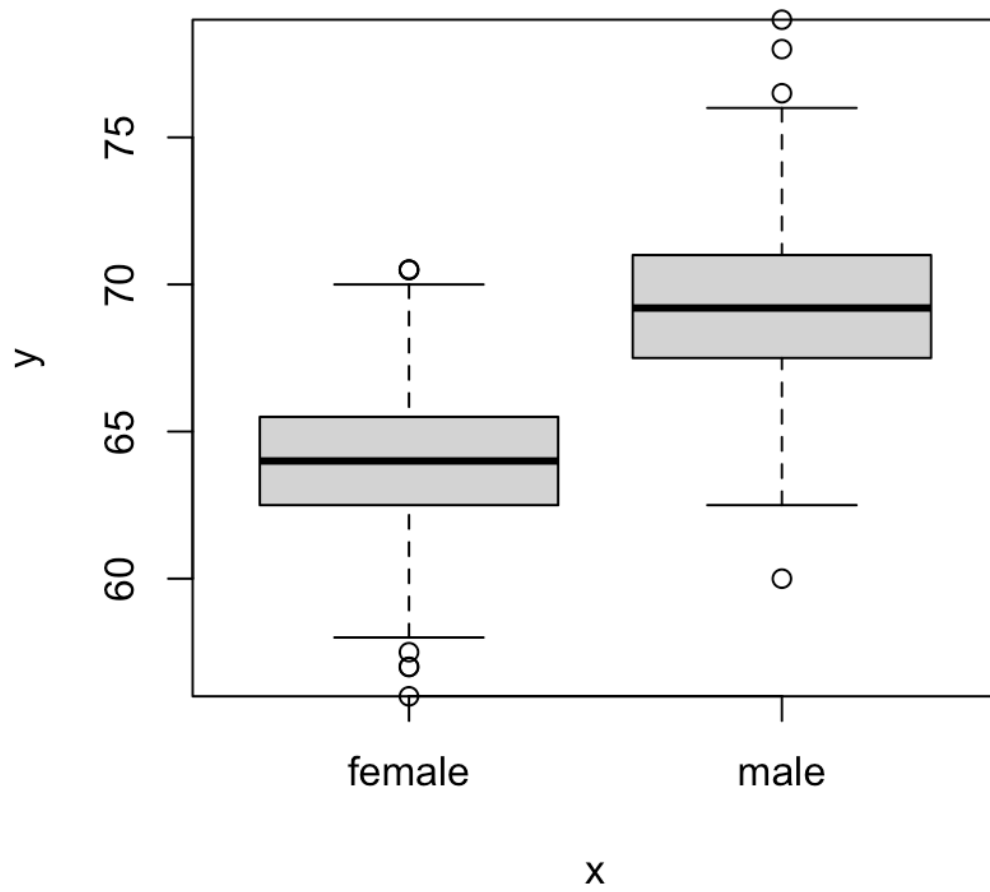
```
bwplot(child, main = "Boxplot of Child Height")
```

Boxplot of Child Height

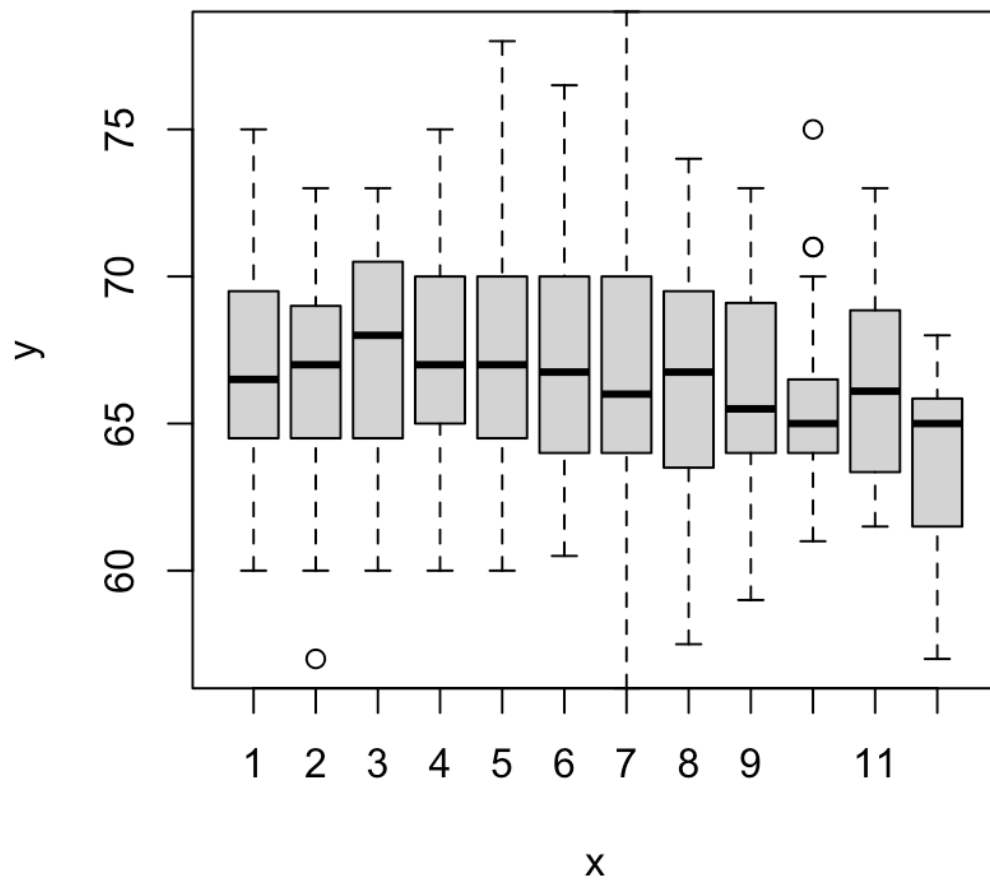


```
attach(GaltonFamilies)
```

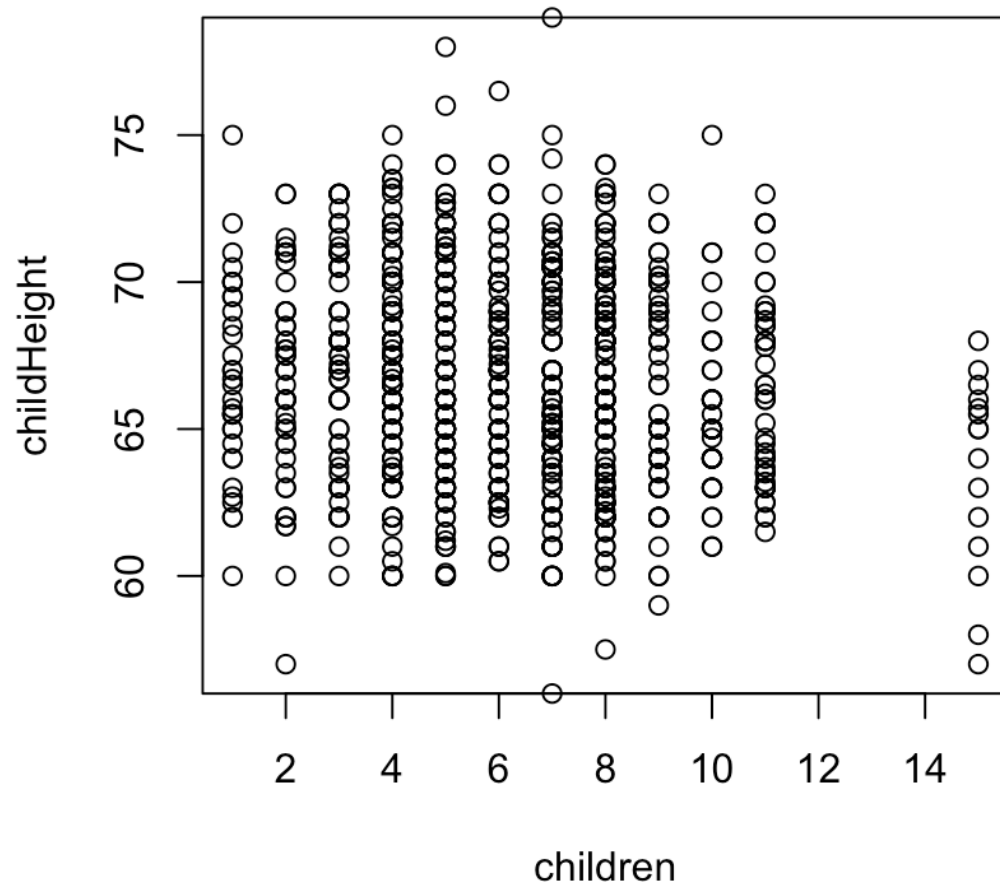
```
plot(gender, childHeight)
```



```
plot(as.factor(children), childHeight)
```

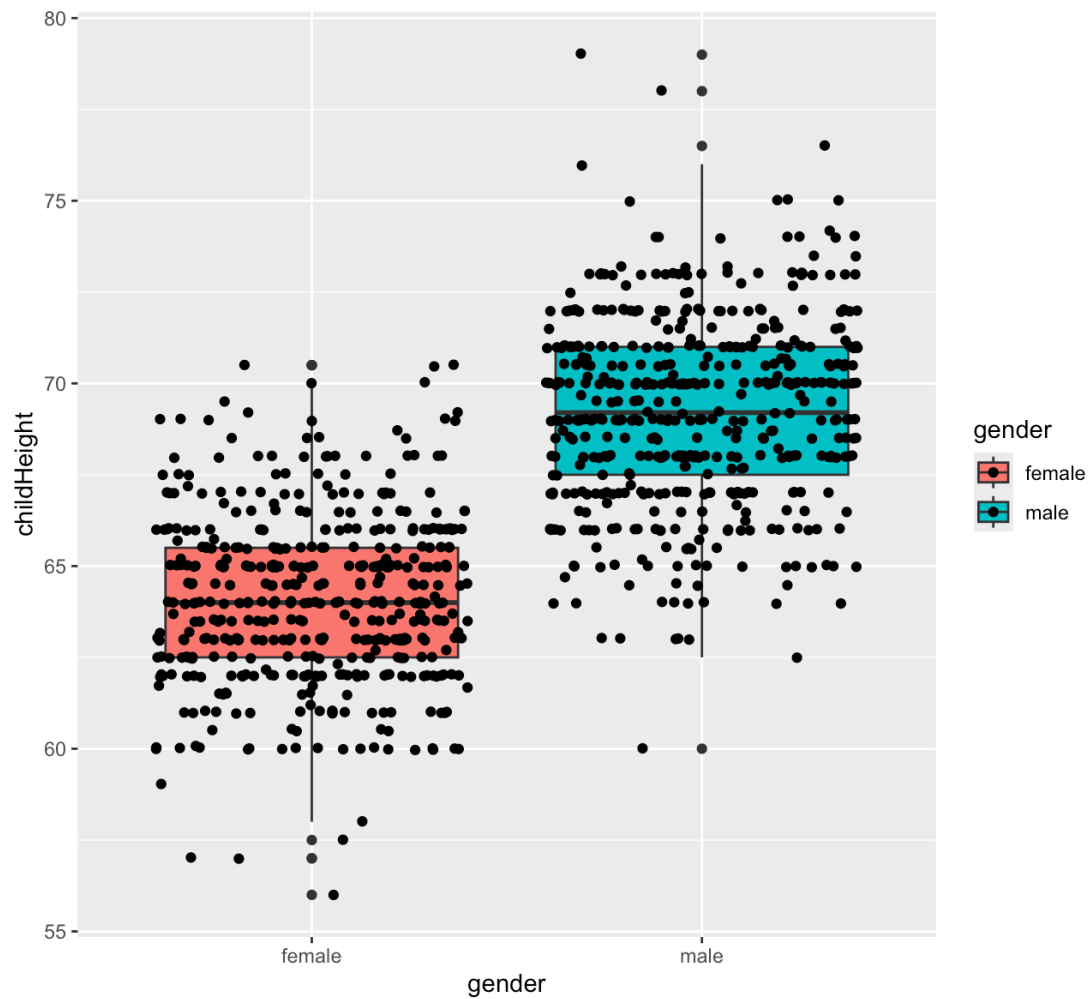


```
plot(children, childHeight)
```



```
qplot(x = gender, y = childHeight, data =
```

```
GaltonFamilies, geom=c("boxplot", "jitter"), fill=gender)
```



```
achiev=read.table('/Users/chiao/Downloads/achiev.txt', head = 1)
```

Achiev

Ind ac teach text

1	1 70	1	1
2	2 67	1	1
3	3 65	1	1
4	4 75	1	2

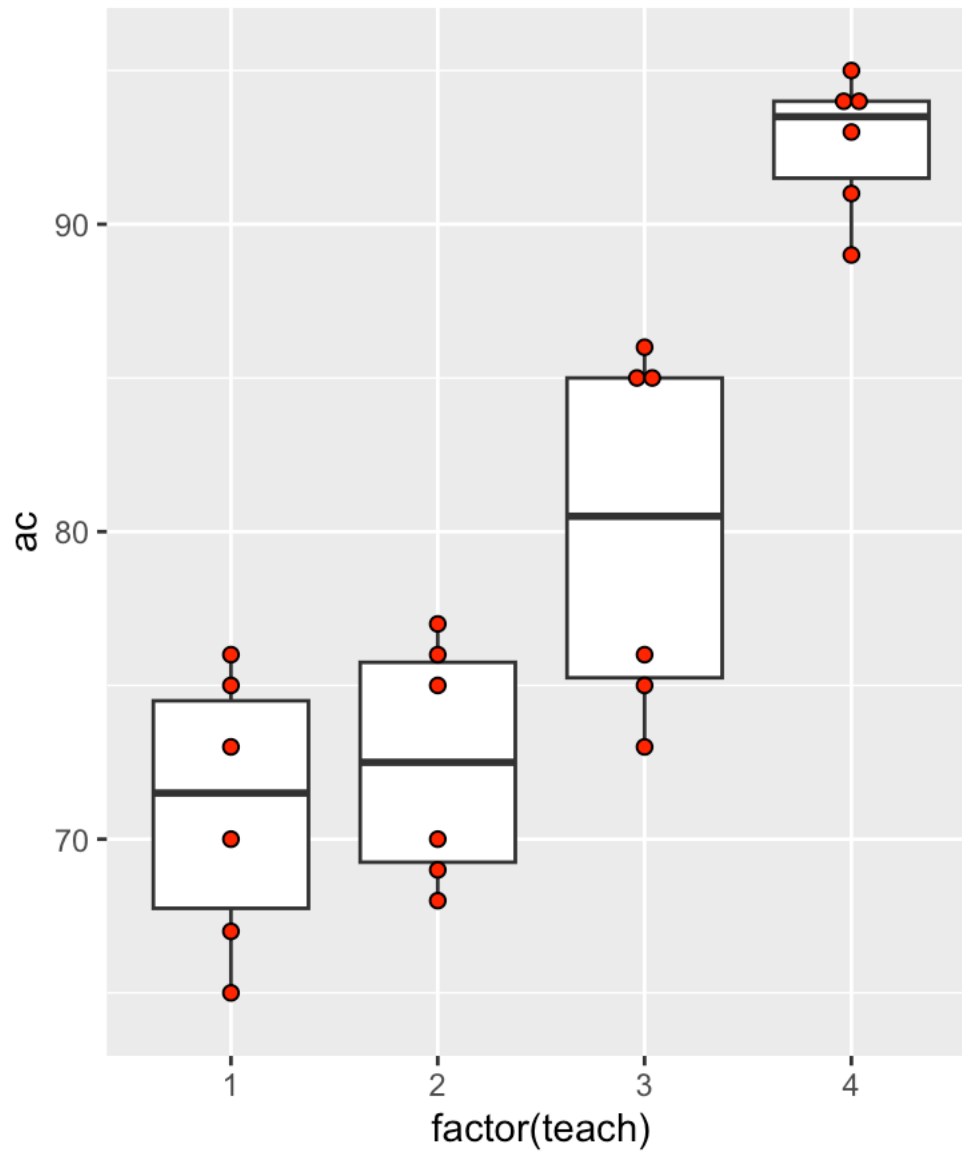
```
g <- ggplot(achiev, aes(factor(teach), ac))
```

```
g + geom_boxplot() +geom_dotplot(binaxis = "y",
```

```
stackdir = "center",
```

```
dotsize = 0.5,
```

```
fill = "red")
```



```
iris$Species <- as.factor(iris$Species)
```

```
head(iris)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
1	5.1	3.5	1.4	0.2
2	4.9	3.0	1.4	0.2
3	4.7	3.2	1.3	0.2

4	4.6	3.1	1.5	0.2
5	5.0	3.6	1.4	0.2
6	5.4	3.9	1.7	0.4

Species

1 setosa

2 setosa

3 setosa

4 setosa

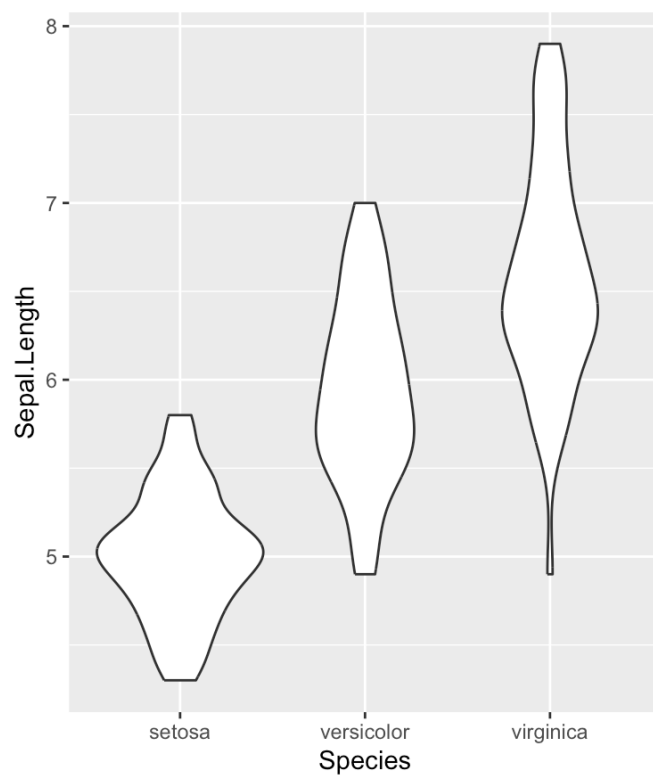
5 setosa

6 setosa

library(ggplot2)

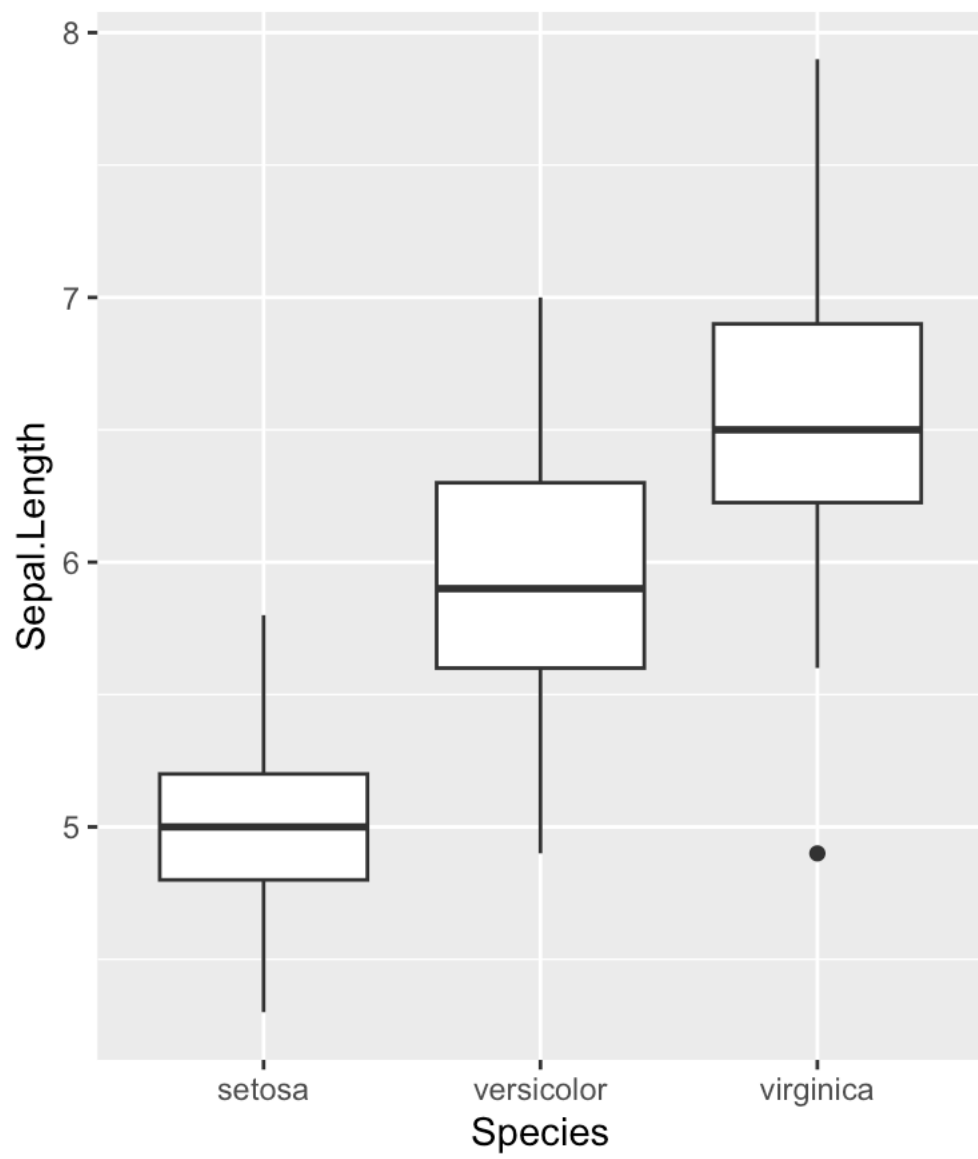
iris.violin <- ggplot(iris, aes(x = Species, y=Sepal.Length)) + geom_violin()

iris.violin




```
iris.boxplot <- ggplot(iris, aes(x = Species, y=Sepal.Length)) + geom_boxplot()
```

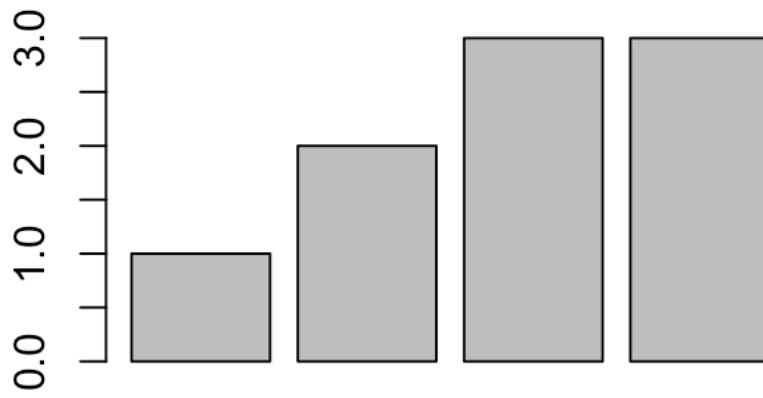
```
iris.boxplot
```



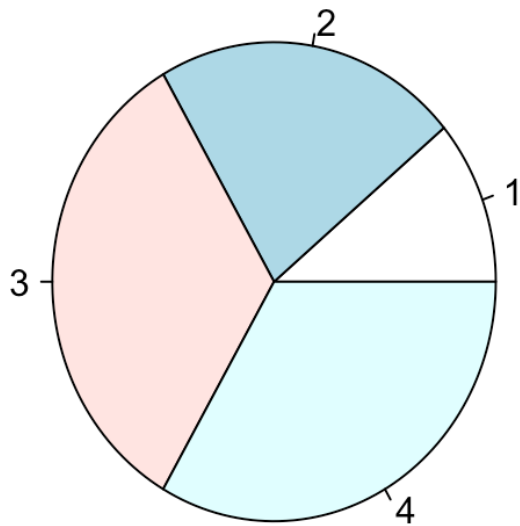
x <-

`c(1, 2, 3, 3)`

`barplot(x)`



`pie(x)`

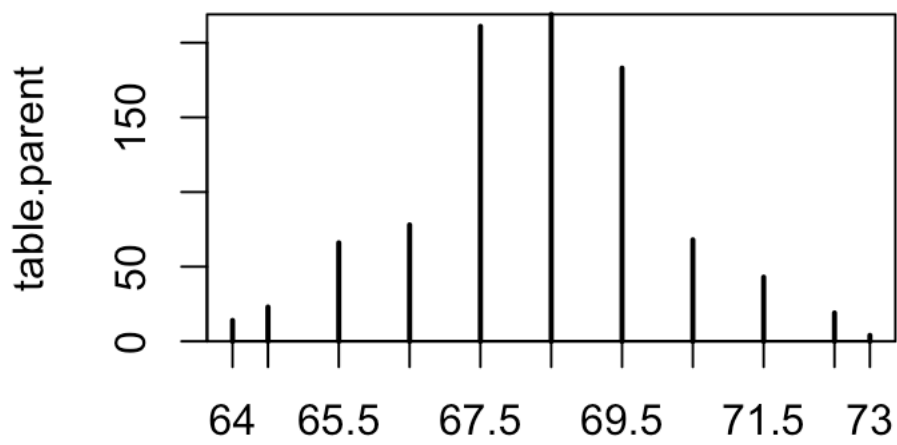


```
table.parent <- table(Galton$parent)
```

```
table.parent
```

```
64 64.5 65.5 66.5 67.5 68.5 69.5 70.5 71.5 72.5
14  23  66  78 211 219 183  68  43  19
73
4
```

```
plot(table.parent)
```



```
barplot(table.parent)
```

