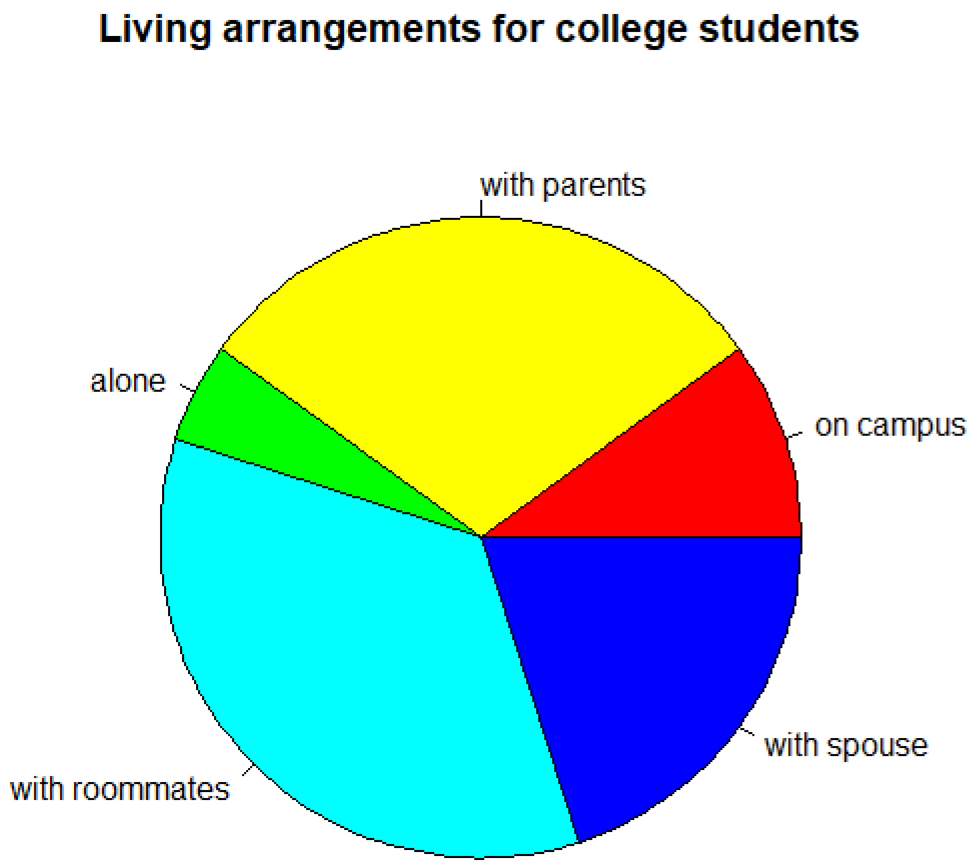
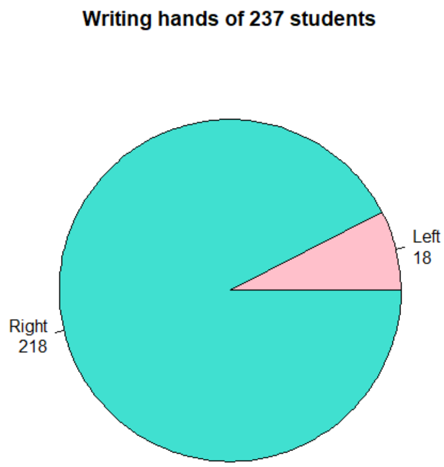
1.

```
> homeType$colours = c("red", "yellow", "green", "cyan", "blue")

> homeType$name = "Living arrangements for college students"
> pie(percent, homeType, col = homeType$colours, main = homeType$name)
```



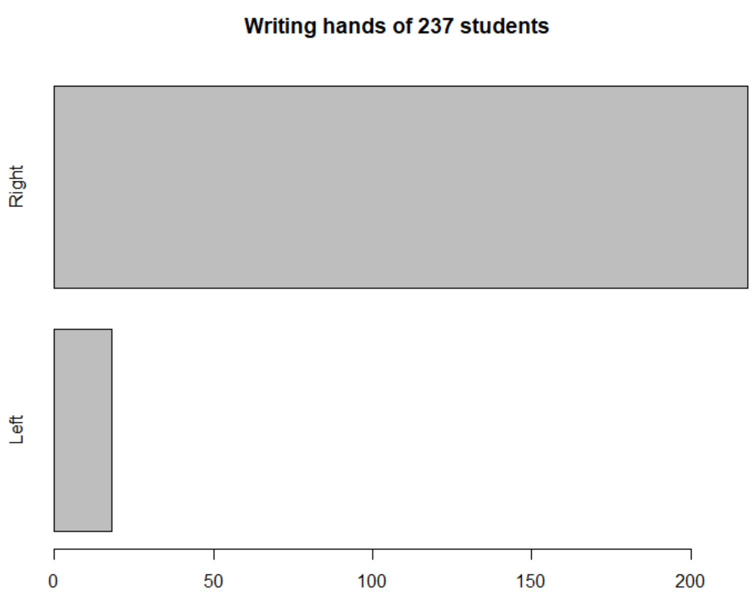
2.

```
> tab=table(hands)
> tab
hands
 Left Right
   18   218

> lbls=paste(rownames(tab), sep="\n", tab)
> lbls
[1] "Left\n18"   "Right\n218"

> tab$colour = c("pink", "turquoise")

> tab$name = "Writing hands of 237 students"

> pie(table(hands), lbls, col = tab$colour, main = tab$name)
```



3.

```
> tab$name = "Writing hands of 237 students"
> barplot(table(hands), horiz = TRUE, main = tab$name)
```



4.

```
> stem(survey$Height, scale = 2)

  The decimal point is at the |

  150 | 0
  152 | 045
  154 | 9900
  156 | 02000555
  158 | 000
  160 | 00000000
  162 | 56666000
  164 | 000000000000000001111
  166 | 4500000066666
  168 | 000000059002
  170 | 0000000000000222200005
  172 | 00000007777770000
  174 | 00000033333
  176 | 005500088
  178 | 00500011
  180 | 00000000333333333
  182 | 059999000
  184 | 0000000044
  186 | 000
  188 | 000000
  190 | 0005558
  192 | 0
  194 | 0
  196 | 0
  198 |
  200 | 0
```

5.

```
___________________________________________________________________________
> stem.leaf.backback(MensHeights, WomensHeights,depths=FALSE)
___________________________________________________________________________
  1 | 2: represents 12, leaf unit: 1
                        MensHeights       WomensHeights
___________________________________________________________________________
                                  4| 15* |02234
                                   | 15. |5566777777899
                                 00| 16* |0000002222233334444
                         8877755555| 16. |555555555555566777777777788888888999
                   4332222111000000| 17* |0000000000001112222222233
                9999988777766655555| 17. |555568
        44333222222000000000000000| 18* |0
                   99877777555555555| 18. |
                           31000000| 19* |
                                 65| 19. |
                                  0| 20* |
___________________________________________________________________________
n:                               118       118
NAs:                              12        16
___________________________________________________________________________
```

6. Based on the back-to-back stem plots for men’s and women’s heights, the one difference between the datasets that is immediately apparent is that women’s heights fall between 150cm and 178cm with a peak at 165-169cm creating a symmetrical data shape, while most men’s heights fall between 165cm and 193cm with a peak at 180-184cm, also creating a symmetrical data shape. Both group shares the same number of 6 ranges for each stem number.

7.

```
> range(males$Age)
[1] 16.750 70.417
```

```
> range(females$Age)
[1] 16.917 73.000
> breaks = seq(15, 75, by=5)
> breaks
 [1] 15 20 25 30 35 40 45 50 55 60 65 70 75
```

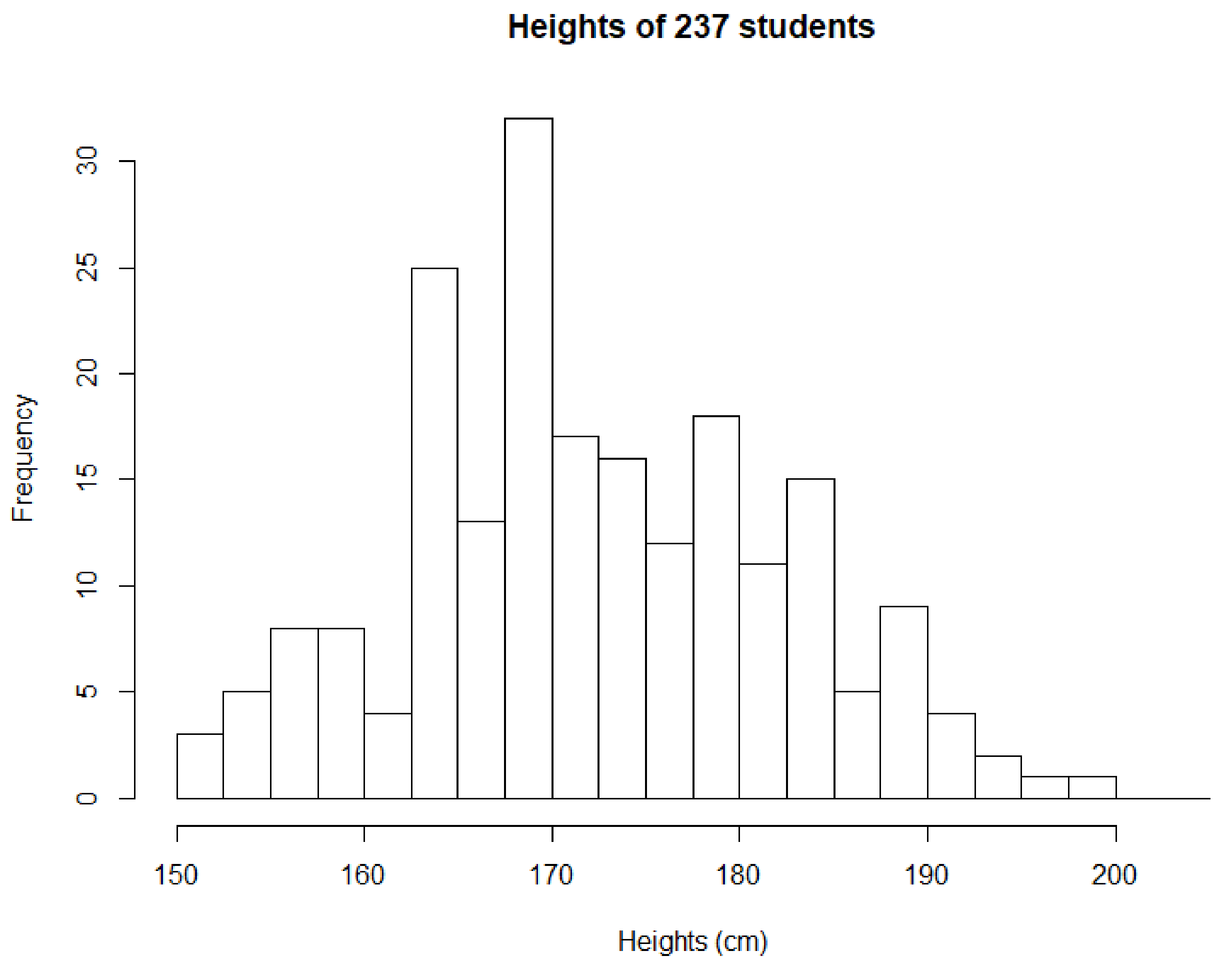
```
> femalesAge = females$Age
> femalesAge.cut = cut(femalesAge, breaks, right=FALSE)
> femalesAge.freq=table(femalesAge.cut)
> cbind(femalesAge.freq)
        femalesAge.freq
[15,20)              88
[20,25)              19
[25,30)               3
[30,35)               3
[35,40)               2
[40,45)               2
[45,50)               0
[50,55)               0
[55,60)               0
[60,65)               0
[65,70)               0
[70,75)               1
>
```

```
> malesAge = males$Age
> malesAge.cut = cut(malesAge,breaks,right=FALSE)
> malesAge.freq=table(malesAge.cut)
> cbind(malesAge.freq)
        malesAge.freq
[15,20)            83
[20,25)            27
[25,30)             3
[30,35)             1
[35,40)             2
[40,45)             1
[45,50)             0
[50,55)             0
[55,60)             0
[60,65)             0
[65,70)             0
[70,75)             1
>
```

Based on the two frequency tables for female's age and male's age, the distribution of ages is very much similar between two genders. The most similar is at the age range from 15 to 20, where females and males are 88 students and 83 students respectively, which is not significantly different. For the age range between 20 and 25, female group has 8 students lesser than male, which is slightly a bigger gap between the 2 groups. For the older age ranges from 25 onwards, both genders have around 1-3 students for each range. There are no students from 45 to 70 of age for females and males, but there is one student for each group from 70-75 years old.

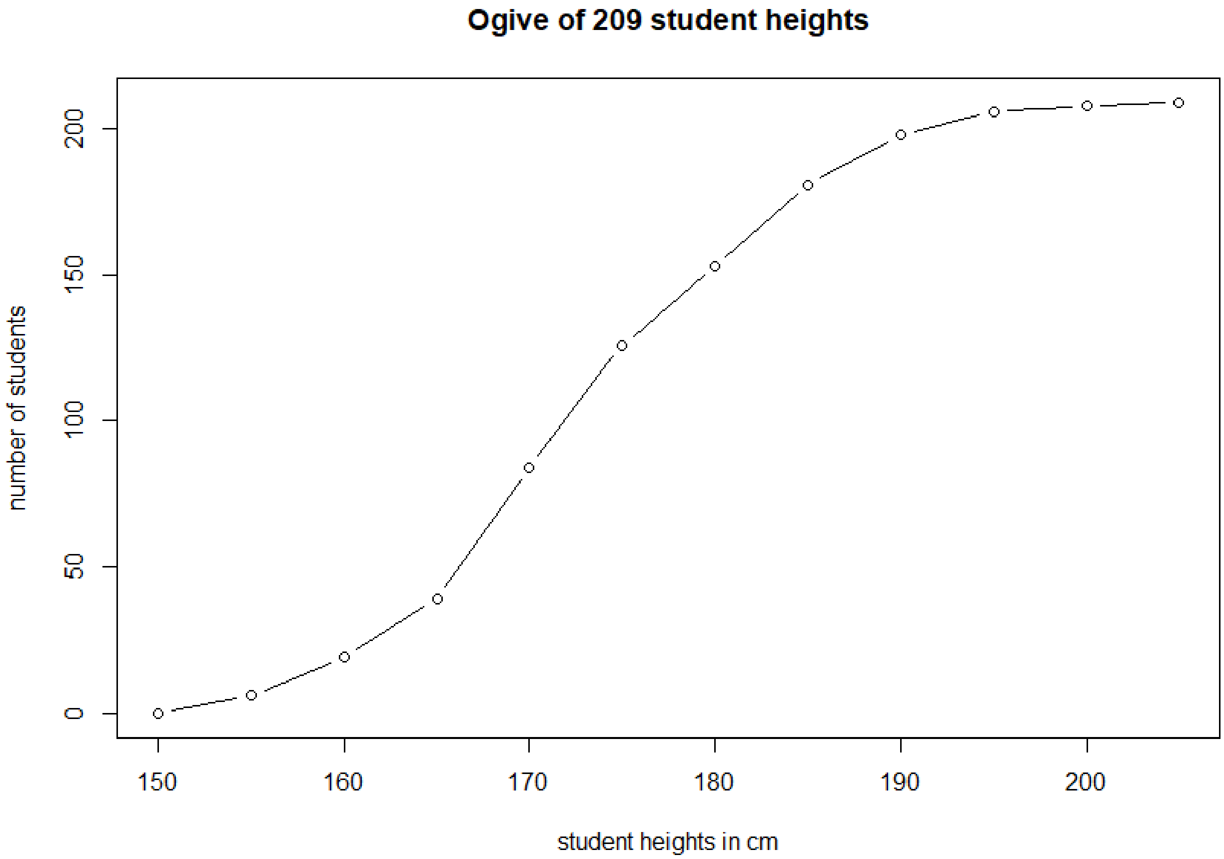
8.

```
> hist(numHeights, breaks=seq(150,205,by=2.5), main="Heights of 237 students", xlab="Heights (cm)",
 col="white")
```



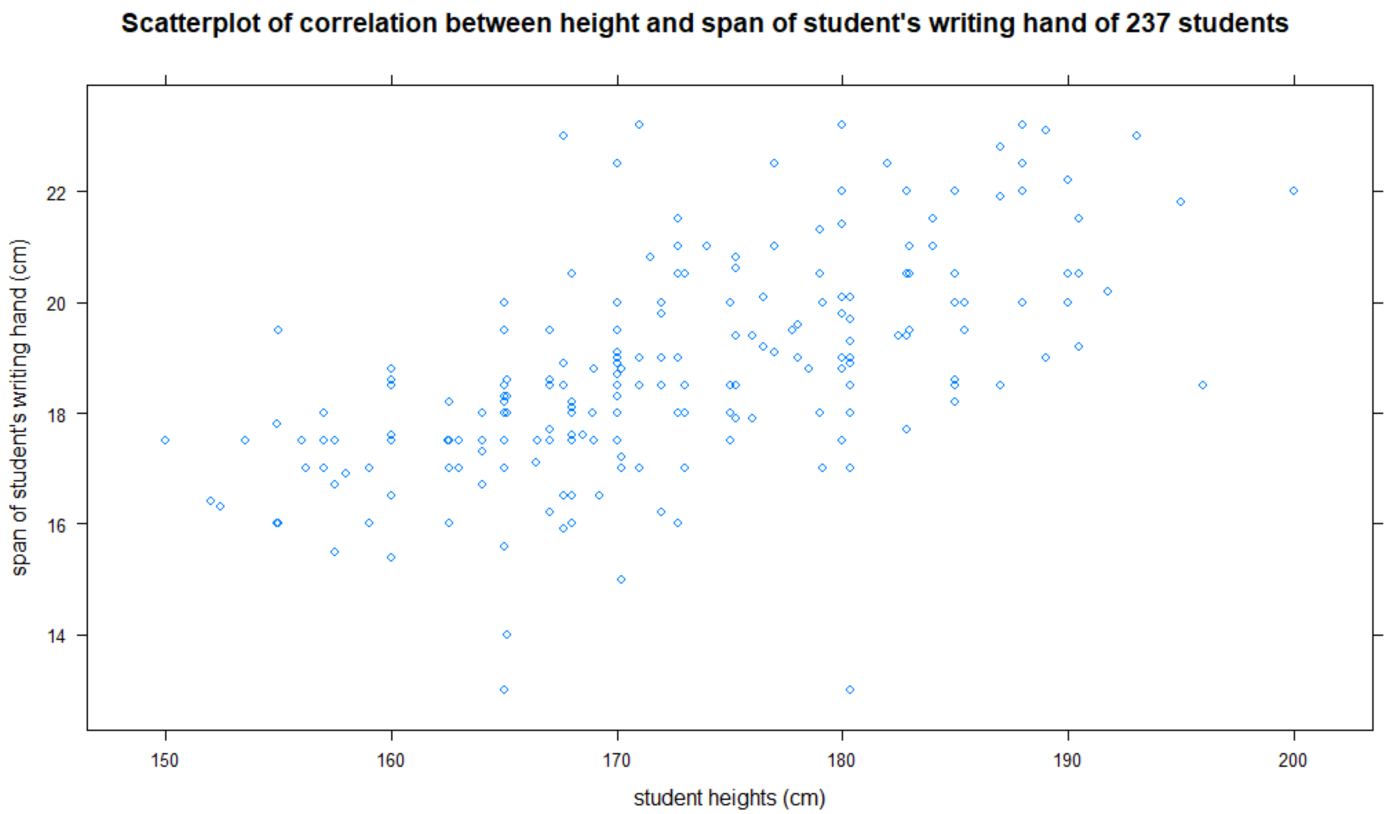
9.

```
> freqs=c(0, numHeights.cumfreq)
> plot(breaks, freqs)
> plot(breaks, freqs, xlab="student heights in cm", ylab="number of students",
 main="Ogive of 209 student heights", type="b")
```



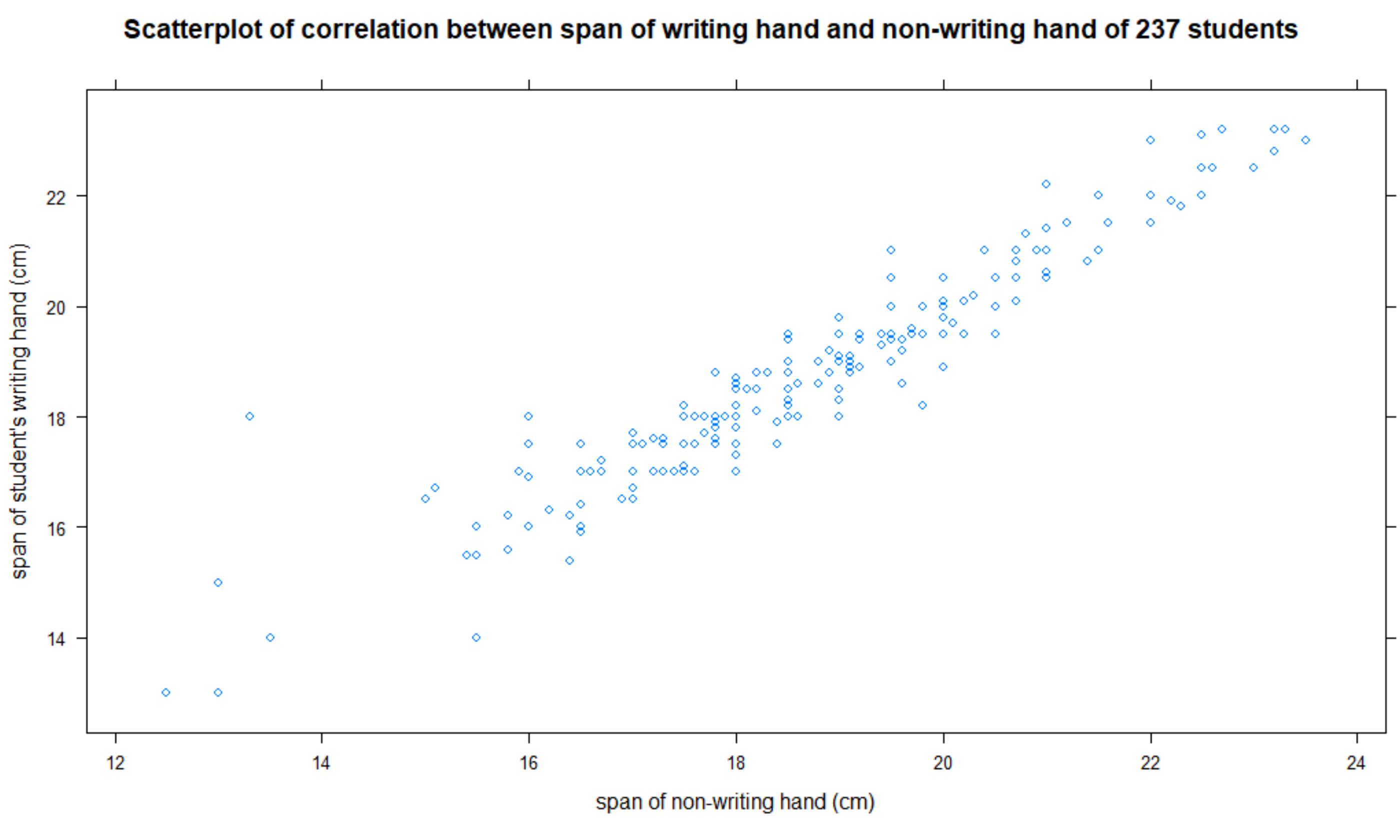
10.

```
> xyplot(survey$Wr.Hnd ~ survey$Height, xlab="student heights (cm)", ylab="span of student's writing hand (cm)", main="Scatterplot of correlation between height and span of student's writing hand of 237 students")
```

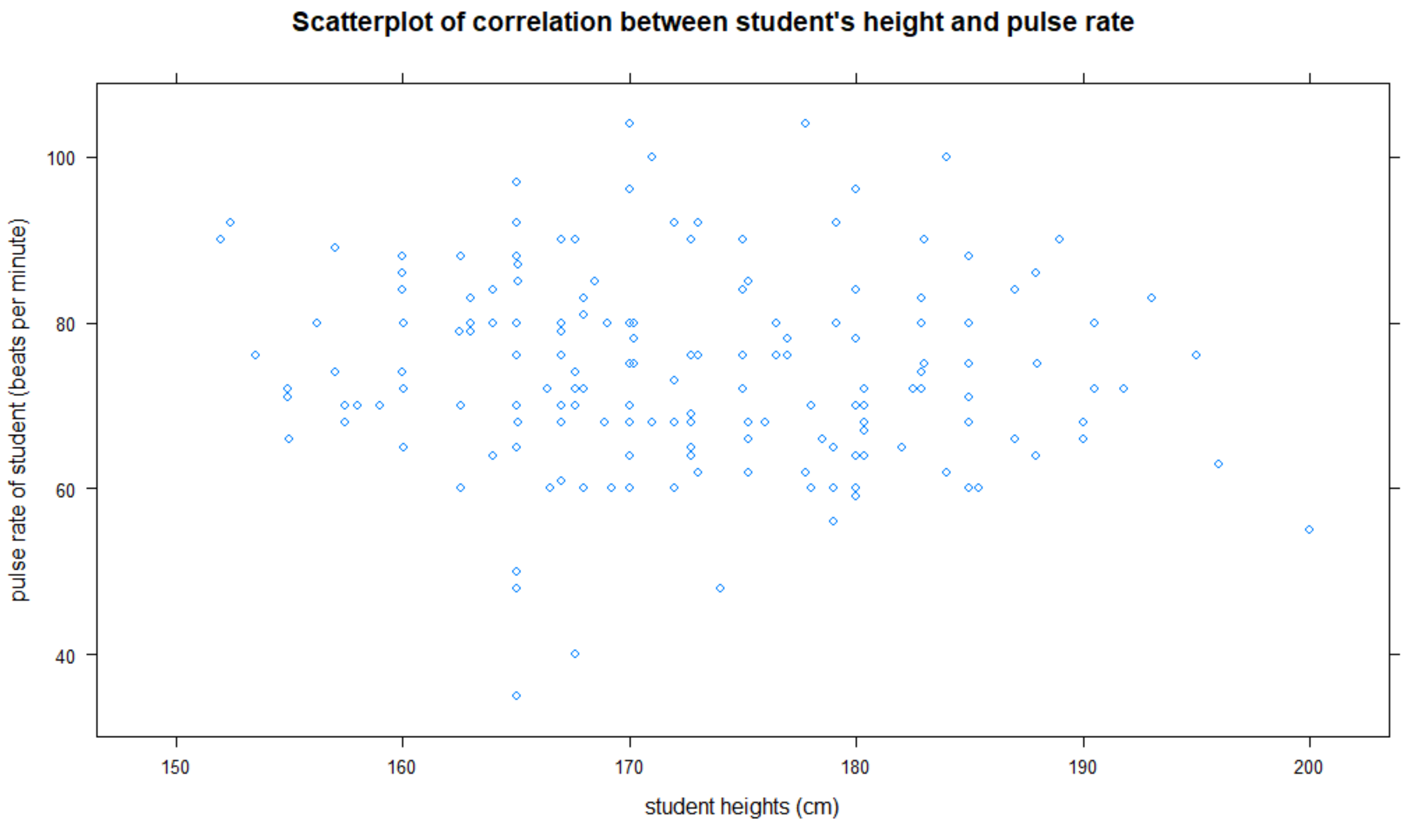


11.

```
> xyplot(survey$Wr.Hnd ~ survey$NW.Hnd, xlab="span of non-writing hand (cm)", ylab="span of student's
 writing hand (cm)", main="Scatterplot of correlation between span of writing hand and non-writing han
d of 237 students")
```



```
> xyplot(survey$Pulse ~ survey$Height, ylab="pulse rate of student (beats per minute)", xlab="student heights (cm)", main="Scatterplot of correlation between student's height and pulse rate")
```



From the scatterplot of student's heights and span of writing hand, taller students have wider span of writing hand as the height goes up, the width of writing hand goes up as well. For the scatter plot of student's span of writing hand and non-writing hand, the spans for both hands are roughly the same, the wider their writing hand is, the wider their non-writing hand is. As for the scatterplot of student's height and pulse rate, their heights don't affect their heart rate as mostly all of them has pulse rate between 60 and 90 beats per minute. In general, student heights have positive correlation with the span of their writing hand and non-writing hand, but don't have correlation with pulse rate as no matter how tall they are, their heart rate remains in the same range.