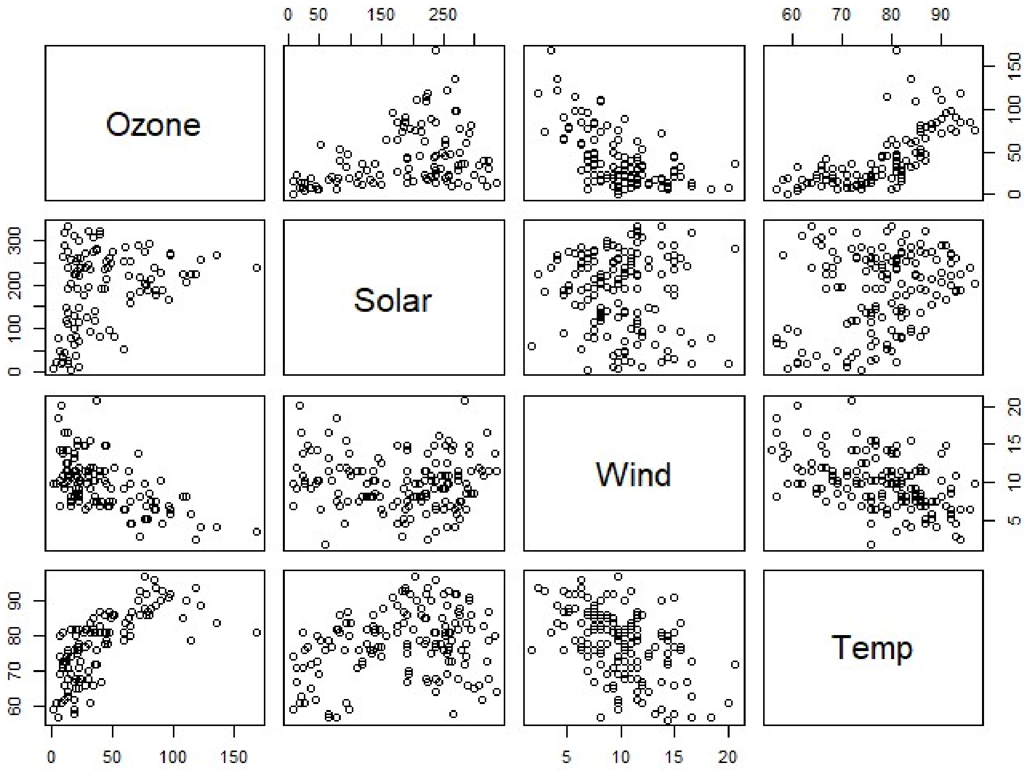
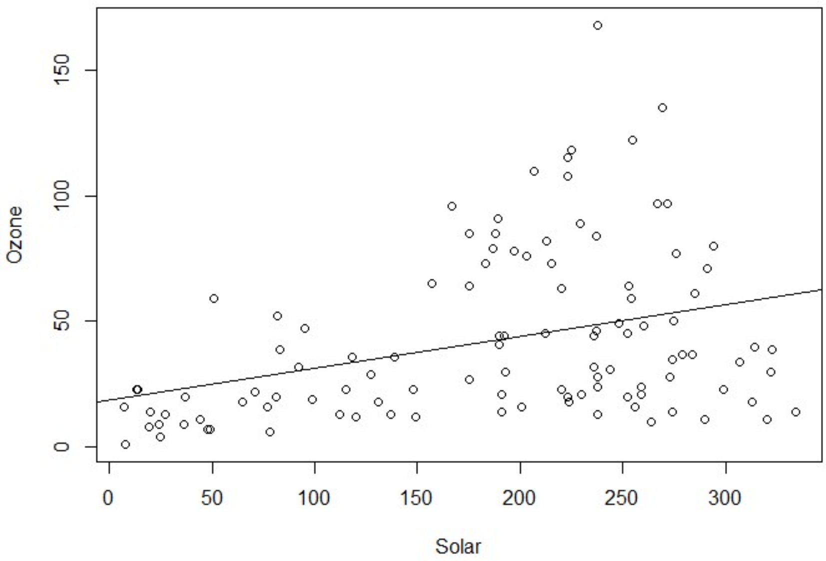
```r
#import dataset
df = data.frame(airquality)
colnames(df)
colnames(df)[2]= "Solar"

#1. We will treat Ozone as the response variable and
#use Temp, Wind, and Solar.R as explanatory. We won't use Month or Day
AQ = df[, 1:4]

#Create a scatterplot matrix of these four variables
library(dyplyr)
pairs(AQ)
```




```
# (a) Relationships of each X with Y
#Ozone and Solar.R looks like has a positive relationship
#Ozone and Wind has a negative relationship
#Ozone and Temp has a more clear positive relationship

# (b) Relationships among the three explanatories.
#Solar and Wind looks like doesn't have a specific relationship
#Solar and Temp might have a positive relationship but not that strong
#Wind and temp has a negative relationship
```

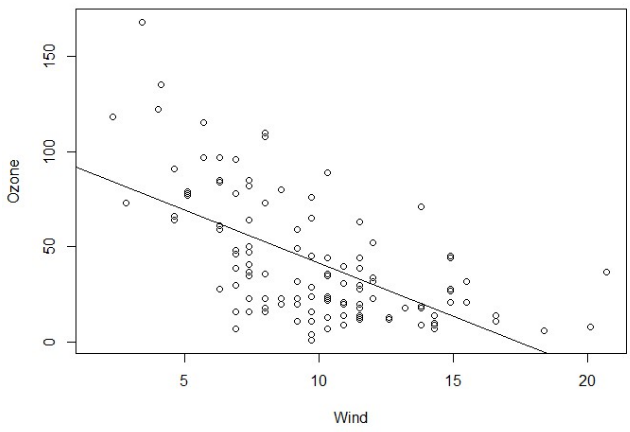
```
#2. Run separate simple linear regressions of Ozone against each explanatory variable.
#(a) Report the three slopes and t-values in a table.
fit.solar = lm(Ozone ~ Solar, data = AQ)
fit.wind = lm(Ozone ~ Wind, data = AQ)
fit.temp = lm(Ozone ~ Temp , data = AQ)

summary(fit.solar)
#Solar slope: 0.12717 t-values: 0.000179
summary(fit.wind)
#Wind slope: -5.5508 t-values: 9.27e-13
summary(fit.temp)
#temp slope: 2.4287 t-values: < 2e-16
```

```
#(b) Make three separate scatterplots and add the respective regression lines to each
#plot. Present the plots and comment on how well the lines seem to fit each variable.
with(AQ, plot(Solar, Ozone))
abline(fit.solar)
```



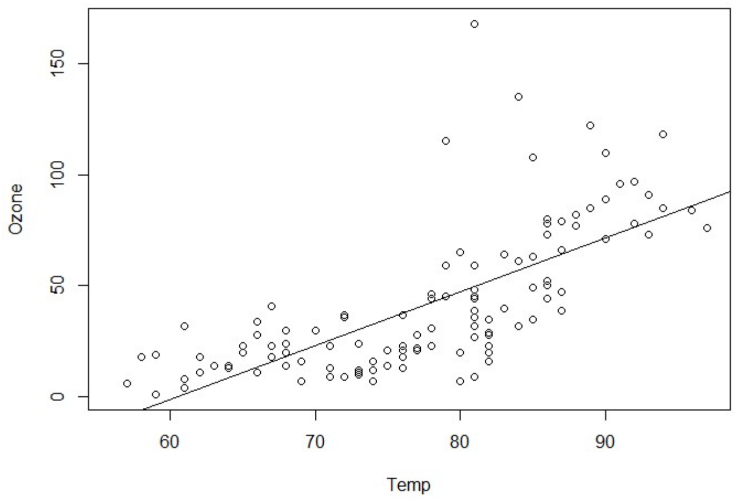
The line looks okay in that as solar increases, Ozone also increases.

```
with(AQ, plot(Wind, Ozone))
abline(fit.wind)
```



The line looks okay but there are some variances.

```
with(AQ, plot(Temp, Ozone))
abline(fit.temp)
```



This line fits well compare to other lines. The line shows the general trend well.