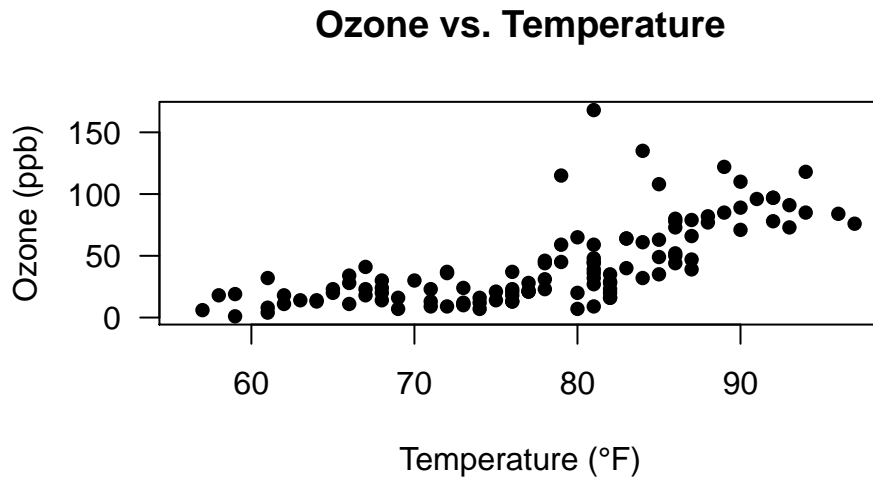


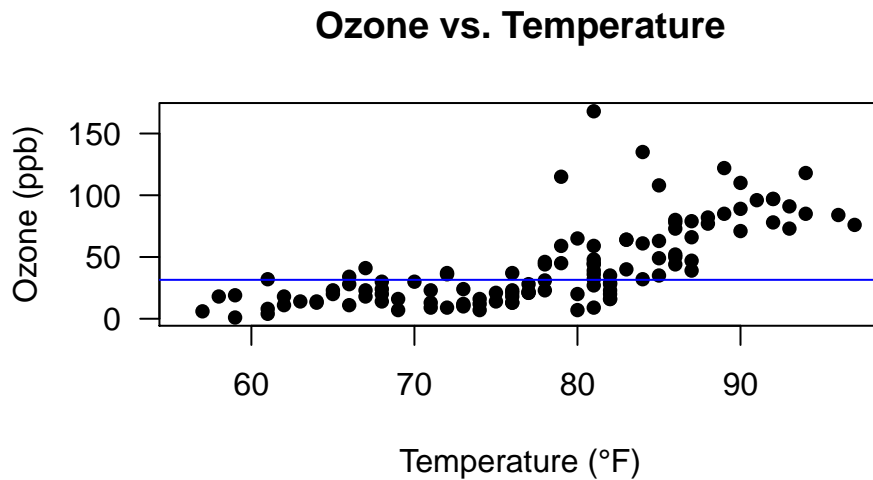
Exercise 3

1. Plot the airquality dataset

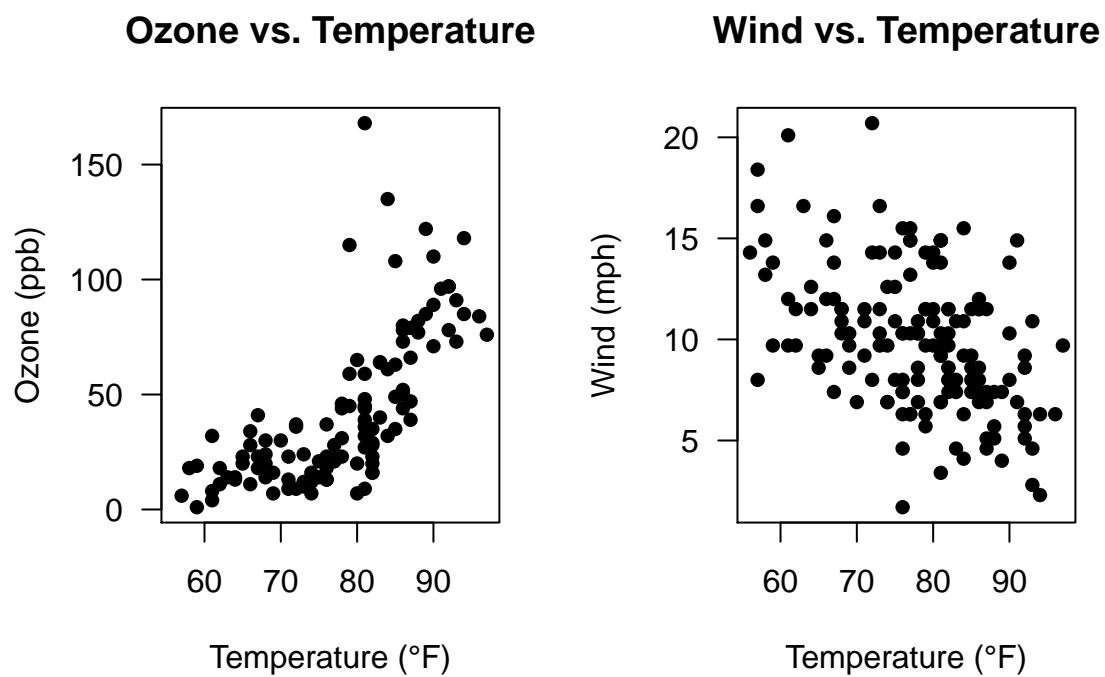
- i) Load the `airquality` dataset
- ii) Try to reproduce the plot shown below with `Temperature` on the x-axis and `Ozone` on the y-axis



- iii) Calculate the median ozone concentration and add it to the plot as a line



iv) Add a second plot on the right with `Temperature` on the x-axis and `Wind` on the y-axis



v) Save these plots as a PDF

vi) *Advanced:* Calculate a linear regression between wind and temperature and add the regression line to the respective plot

Hints

1. Plot the airquality dataset

- i) Load the `airquality` dataset Use the command `data("airquality")` to load the dataset.
- ii) Try to reproduce the plot shown below with `Temperature` on the x-axis and `Ozone` on the y-axis
 - Axis labels: `xlab = "some text", ylab = "some text"`
 - Title: `main = "some text"`
 - Horizontal axis numbering: `las = 1`
- iii) Calculate the median ozone concentration and add it to the plot as a line
 - Use the command `median` to calculate the median (→ Do not forget to remove NA values with `na.rm = TRUE`)
 - Use the command `abline` to add a line to an existing plot.
- iv) Add a second plot on the right with `Temperature` on the x-axis and `Wind` on the y-axis Use the command `par(mfrow = c(1, 2))` to create two plot windows (`c(1, 2)` means 1 row and 2 columns). Alternatively you can use the command `layout(mat = matrix(c(1:2), ncol = 2))`.
- v) Save these plots as a PDF
Use the following structure:
 1. `pdf(file = "path_to_file/file_name.pdf")`
 2. Code to produce the plots (as many lines of code as needed)
 3. `dev.off()`
- vi) Calculate a linear regression between wind and temperature and add the regression line to the respective plot
 - Use the command `lm(...)` (`?lm`) to calculate a linear regression.
 - Use the command `abline` to add the regression line to the plot.