Equitable Equations: *Boxplots*

Problem 1

The following table shows 20 observations of gas mileages of 20 cars from model year 1974.

10.4	13.3	15.0	15.2	15.2	15.8	16.4	18.1	18.7	19.2
19.2	21.0	21.0	21.4	22.8	22.8	27.3	30.4	32.4	33.9

(a) Compute the five-number summary and IQR.

(b) Should any of these observations be considered outliers? Apply the standard from class.

(c) Sketch a boxplot for this data.

Problem 2

Refer to the `rock_sample` data set, available on Moodle.

(a) Compute the five-number summary and IQR for the `area` variable. The `sort` command may be helpful. Do NOT use more advanced tools (even the `median` function).

(b) Should any of these observations be considered outliers? Apply the standard from class.

(c) Sketch a boxplot for this data.

Problem 3

Refer to the `iris` data set, which is built-in in R.

(a) Compute the five-number summary and interquartile range for the variable `Sepal.Width` using one command each (no arithmetic or sorting needed).

(b) Should any of these observations be considered outliers? Apply the standard from class.

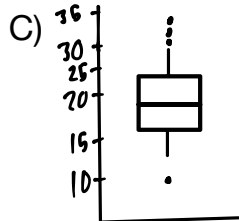(c) Sketch a boxplot for this data.

1.

A) Min:10.4

Q1:15.5

M: 19.2

Q3: 22.8

Max:33.9

IQR:7.3   1.5x1QR=10.95

B)Outliers include 10.4, 30.4, 32.4 and ~~33.9~~   *only outlier*

C)

2.

A) Min: 1016

Q1: 5,256.5

M:7416

Q3: 8871   1.5x1QR= 5421.75

Max: 12212

IQR: 3614.5   *No outliers*

B) Outliers include 1016, 1468, 1651
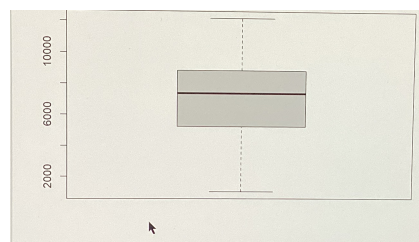
3.

A) Min: 2

Q1:2.8

M:3

Q3: 3.4

Max: 4.4

IQR:0.5

$1.5 \times IQR = 0.75$

B) anything below 2.~~8~~ 05 or above ~~3.9~~ 4.15 is an outlier

C)