Homework 3, My Name.

Problem #1

In data set *cystfibr* of *ISwR* package, proceed to:

1. Use a looping construct to loop through each variable and calculate mean and standard deviation *without* using *R*'s customized functions like $mean(), sd()$.
2. Create a matrix with rows corresponding to variables, columns - to calculated summaries (mean, sd), and fill it out with the results of the previous step accordingly. Please assign appropriate row and column names as well.
3. Proceed to:
    a. Extract all information on first 10 observations.
    b. Extract all information on observations $\#5, 10$ & 15.
    c. Extract all information on last 10 observations.
    d. Extract all information on the first *variable*.
    e. Extract information on the first *variable* for observations $\#5, 10, 15$.
    f. Extract all information on the patients of above-average height.
4. Show all the information on 5 oldest patients.
5. Using a *subset*() function, only select the observations that have above-average values for both *weight* and *height*.
6. Make a scatterplot for an arbitrary pair of quantitative variables, comment on the relationship.

Problem #2

Count the total number of boys in data set *juul* (from package *ISwR*), who have insulin-like growth factor greater than 400, in three different ways (make sure the output is the same though):

```
library(ISwR)
juul_clean <- subset(juul, !is.na(sex) & !is.na(igf1))
```

- Using for-loop
- Using vectorized operations (can be done in one line)
- Using data frame subsetting (can be done in one line)

Problem #3

3.3, 3.61, 3.63, 3.14, 3.16