

HW 1

1. For the vector x with values (13,22,8,17,9,12,15,25,14) find its mean, variance, range and the 0.25 and 0.65 quantiles.

2. Repeat problem 1 but now with the second value of x change to 24 and with two additional values added, 11 and 21.

3. Let X be a random variable that takes on the possible values 1, 2, 3, 4 and 5 with probabilities, .1, .2, .25, .35 and .1. Find $E(X)$ and $Var(X)$.

4. In its base package R contains some data sets. To see the name of the sets in R type `library(help=datasets)`. One such set is `cars`. For 50 cars it gives the speed and how long it took the cars to stop. Use the command `data(cars)` to retrieve the 50 by 2 matrix where the first column is the speed and the second is the stopping distance. Make a plot of stopping distance against speed.

5. As companion to the text there is a library of data available from CRAN which is called ISwR. You need to install this on your computer. One set is the vector `IgM` which is immunoglobulin G data for 298 children. Make a histogram of this data.

This is how I installed ISwR but you will probably need to do something a bit different.

```
> library(ISwR)
> data(IgM)
> IgM[1:8]

[1] 0.1 0.1 0.1 0.2 0.2 0.2 0.2 0.2
```

During the semester I will put data sets on the class web page. For a vector of real numbers you can use the `scan` function to download it onto your computer. Here is a simple example. Once you grab it you can then operate on it in the usual fashion.

```
> foo<-scan(
+   "http://users.stat.umn.edu/~gmeeden/classes/5021/datasets/testvec.txt")
> foo

[1] 1 2 3 4 5 6 7 8 9 10

> mean(foo)

[1] 5.5
```