Statistics 1211 Spring 2008 HW 6
Due in class or in my mailbox before class on March. 10

Section 1 (ungraded) out of 40 Adapting the code from HW5, use R to generate 5 uniform random variables on the unit interval, naming the variable

```
unif5
```

gives the average of the 5 numbers and

```
sort(unif5)[4]
```

gives the 4th largest value of

```
unif5
```

a) Compare the sample mean and sample median of 5 uniform random numbers from the uniform distribution on $[0, 1]$.

b) Compare the sample mean and sample median of 100 uniform random numbers from the uniform distribution on $[0, 1]$.

c) Pretend that you did not know the underlying distribution used to generate the random numbers, only that it was uniform on some interval $[0, \theta]$ where θ was uknown. You could use the sample mean and median to estimate θ. State how and comment / describe any differences and or advantages of using the medians and means to estimate θ as well as how these differences depend on $n = 5$ or 100, if at all. (No need to include in hw, but you can think about or experximent with intermediate values of n or even larger values).

Section 2 (graded) from Devore, 7th edition: Exercises

5.3.37, 5.3.38, 5.3.40, 5.4.54, 5.4.49, 5.4.51