

Stat 311: HW 1, due Th 4/1/10 in Quiz Section

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Your returned assignment should show your name and student ID number. It should be printed or written clearly.

1. Give the results when executing the following commands in an R session.

```
> z.q <- qnorm(.05)
> z.q
> pnorm(z.q)
> runif(5)
> factorial(5)
> factorial(9)/(factorial(4)*factorial(5))
> choose(9,4)
```

Explain the resulting output in each case as well as you can. Make use of the help facility in R, either by starting the interface opened up by `help.start()` (searching via Search Engine & Keywords) or by using `?command`, for example: `?qnorm` or `?choose`, on the R command line.

2. Problem 3 of the text (p. 20), with the introductory paragraph modified (clarified) as follows: Statisticians say that a procedure is biased when it tends to either underestimate or overestimate the quantity that is to be measured.
3. Take a penny and spin it 100 times on a smooth surface (either a smooth flat floor or table top). Make sure you get a good spin each time, discard the missed tries. See the link after this HW 1 assignment for an illustration of a good spin. If the spin gets disturbed or the penny falls off the table redo your spin. In 50 of these spins, have the Penny's head facing you as you flick it (this is shown in the illustration) and in the other 50 spins have the head facing away from you. For each type of spin record the number of heads facing up that result. Report the results by replacing the ? in the table below by your observed counts.

when you spin the head is facing	number of heads facing up in 50 tries
you	?
away	?

Please tape the penny you used to your assignment. Do this task conscientiously. We all will benefit from these 180×100 spins. It may take you about 40-45 minutes.