PHYS 328
HOMEWORK #6
Due : 2 October 2012 (note the T due date)

In order to grade and return homework to you prior to the first hour exam, please note the short turn around for this homework. All problems from the text.

1. 2.24, p. 67 all parts. In part d), do not explicitly calculate the probability by calculating directly the number of accessible microstates; rather, use the results of part c) to estimate the "reasonableness" of obtaining in the *neighborhood* of 501, 000 heads or 510, 000 heads. 10 points each part.

2. 2.25 p. 67 parts a) and b) only. The problem is predicated on a random walk model which is also known as the "drunken sailor" problem. A drunken sailor walks out of a bar (sounds like the start of a bad joke*) and is so intoxicated he cannot remember whether his last step was to the left or the right. Thus, each step has a 50/50 chance of being to the left or to the right. Assume the sailor only walks in a straight line and that each step is 1 unit of distance (so we have a constrained drunken sailor problem). Explain your answers and/or show work. 10 pts each part.

3. 2.28 p. 77

4. 2.29 p. 77

5. 2.31 p. 79

6. 2.33 p. 79

* A physics joke that came out shortly after scientists at CERN reported the discovery of a faster than light neutrino :

A bartender says ' we don' t serve faster than light neutrinos in here.' A faster than light neutrino walks into a bar ...