Homework # 1.

1. Do problems 4, 7, 8, 10, 15, 16, 17, 20, 21, 22 on page 5. (I am not going to pretend that these are interesting problems, but if you need to review doing algebra with complex numbers they will help.)

2. If $\left(\begin{array}{c} n \\ k \end{array} \right) := \frac{n!}{k!(n-k)!}$ then show $\left(\begin{array}{c} n \\ k \end{array} \right) + \left(\begin{array}{c} n \\ k+1 \end{array} \right) = \left(\begin{array}{c} n+1 \\ k+1 \end{array} \right)$. Use this and induction to do problem 27 on page 6.

3. Problem 31 page 6.

4. Problems 3, 4, 5, 6, 7a, 7b, 7c page 11.

5. Problem 8 page 11.

6. Problem 9 page 11.

7. Problem 10 page 11.

8. Problem 14 page 12. (Make sure that you understand this one, as it is a fact that will come up again).