1. Return quizzes (28 total, 81.43%; 13 A’s, 5 B’s, 4 C’s, 1 D, 5 F’s)  
   (28 total, 96.25%; 23 A’s, 5 B’s)
2. Homework: pages 320–322, numbers 1(a), 5, 6(a,b,c), 15, 23  
   page 329, numbers 10, 11, 14  
   Quiz: Tuesday (11/06)
3. **Definition and Notation:** Let \( n \) and \( r \) be nonnegative integers with \( r \leq n \). An \( r \)-combination of a set of \( n \) elements is a subset of \( r \) of the \( n \) elements. The symbol \( \binom{n}{r} \) (read “\( n \) choose \( r \)”) denotes the number of \( r \)-combinations that are possible to form from a given set of \( n \) elements.
4. **Examples:** (1) If a committee is to consist of 3 people from among Jill, Bill, Jan, and Dan, how many such committees are possible? What does this have to do with the above definition?  
   (2) What is the value of \( \binom{4}{2} \)? Do by exhaustion and without exhaustion (there are 12 ways of arranging two elements from four in a row - so why is the answer 6?).  
   (3) What is the value of \( \binom{8}{3} \)? (Do 3 out of 8 ordered in a row first.)
5. **Theorem 6.4.1:**  
   \[
   \binom{n}{r} = \frac{n(n-1) \cdots (n-r+1)}{r!} = \frac{n!}{r!(n-r)!}.
   \]
6. **Examples:** (1) What is the value of \( \binom{10}{3} \)?  
   (2) page 320, number 6(d)  
   (3) page 321, number 14  
   (4) page 329, number 12  
   (5) page 329, number 13
7. **FOIL method and beyond (and simpler).** Explain the binomial theorem.
8. **Some Identities**  
   \[
   \binom{n}{r} = \binom{n}{n-r} \quad \text{and} \quad \binom{n+1}{r} = \binom{n}{r} + \binom{n}{r-1}.
   \]
9. **Pascal’s triangle**
10. **Patterns**  
    - symmetry  
    - first and second element of a row  
    - sum of a row