1. Suppose that a “word” is any string of seven letters of the alphabet, with repeated letters allowed.
2. How many words begin with A or B?
3. How many words have exactly one vowel?
4. Consider all bit strings of length 12.
5. How many begin with 11 or end with 10?
6. How many strings have at least one 1?
7. In a technician's box there are 400 VLSI chips, 12 of which are faulty. How many ways are there to pick two chips, so that one is a working chip and the other is faulty?
8. A club with 20 women and 17 men needs to choose three different members to be president, vice president, and treasurer.
9. In how many ways is this possible?
10. In how many ways is this possible if women will be chosen as president and vice president and a man as treasurer?
11. A class consists of 20 sophomores and 15 freshmen. The club needs to choose four different members to be president, vice president, secretary, and treasurer.
12. In how many ways is this possible?
13. In how many ways is this possible if sophomores will be chosen as president and treasurer and freshmen as vice president and secretary?
14. Suppose  *A*   4 and  *B*   10. Find the number of functions *f*  *A*  *B*.
15. Suppose *f* (*n*)  4 *f* (*n*3)  *n*  2, *f* (1)  2. Find *f* (81).