1.1. A school gives awards in five subjects to a class of 30 students but no one is allowed to win more than one award. How many outcomes are possible?

1.2. Assuming all phone numbers are equally likely, what is the probability that all the digits in a seven-digit phone number are different?

1.3. Six students, three boys and three girls, lineup in a random order for a photograph. What is the probability that the boys and girls alternate?

1.4. A club with 50 members is going to form two committees, one with 8 members and the other with 7. How many ways can this be done (a) if the committees must be disjoint? (b) If they can overlap?

1.5. A die is rolled 8 times. What is the probability that we will get exactly two 3’s?

1.6. Use the Poisson approximation to compute the probability that you will roll at least one double 6 in 24 trials.

1.7. Suppose that the probability of a defect in a foot of magnetic tape is 0.002. Use the Poisson approximation to compute the probability that a 1,500-foot roll will have no defect.

1.8. Four people are chosen at random from 5 couples. What is the probability that two men and two women are selected.

1.9. Ten people call an electrician and ask him to come to their houses on randomly chosen days of the work week. What is the probability that the electrician has at least one day with no jobs?