1. Evaluate the following:

   (a) $P(5,3)$

   (b) $P(12,2)$

   (c) $P(17,4)$

   (d) $P(18,3)$

   (e) $P(4,4)$

   (f) $P(6,5)$

2. In how many ways can 7 books be arranged on a shelf?

3. Ten students have applied for a scholarship. One student will be selected, and another will be named an alternate. In how many ways can this be done?

4. Ten horses are entered in the Kentucky Derby. In how many ways can the horses Win, Place, and Show (finish in first, second, and third places)?

5. In how many ways can a television programming director schedule 7 different commercials in the 7 time slots allocated to commercials during a one-hour program?

6. In how many different ways can five people line up for a photograph?

7. Compute the number of distinguishable permutations of the following words:

   (a) SYZYGY

   (b) BALLOON

   (c) DISTRESS

   (d) ALABAMA

   (e) TENNESSEE

   (f) MISSISSIPPI

8. Six identical red marbles, four identical green marbles, and two identical blue marbles are arranged in a line. How many distinct arrangements of these marbles are possible?

9. The tune "Twinkle, Twinkle Little Star" has seven notes in its first line: C, C, G, G, A, A, G. Assuming that all seven notes are held for the same length of time, how many different melodies can be composed by rearranging the notes?