1. Solve: \( a_n = a_{n-1} + 12a_{n-2} \), with \( a_0 = 0 \), \( a_1 = 1 \).

2. Urn A contains 8 red balls and 2 blue balls. Urn B contains 3 red balls and 7 blue balls. Flip two coins. If you get two heads, draw from Urn A. Otherwise, draw from Urn B.
   a) What is the probability the ball is red?
   b) If the ball is red, what is the probability it came from Urn A?

3. A group of 100 people were asked to taste 5 flavors of ice cream:
   - Each flavor appealed to 60 people.
   - For each pair of flavors, 30 people liked both.
   - For each three flavors, 10 people liked all of them.
   - For each four flavors, 5 people liked all of them.
   - One person liked all five flavors.
   How many people liked none of the flavors?

4. Consider all strings of 6 distinct digits (the first may be a 0).
   a) How many such strings are there?
   b) How many strings contain a 5 and a 7?
   c) How many strings contain a 5 and a 7 next to each other?
   d) How many contain a 5 and a 7 separated by two other digits?

5. How many ways can you seat six people around a table so that Frank and George don’t sit next to each other?

6. A committee contains 6 women and 4 men. How many ways can you choose a 5-person subcommittee that has more women than men?

7. How many ways can you arrange 6 women and 4 men in a line so that no two men stand next to each other?