1. The English alphabet has 21 consonants and 5 vowels. How many possible strings of 8 English letters have exactly 3 vowels?

2. A committee of 7 people will be chosen from a group of 18 women and 12 men.
   (a) In how many ways can this be done?
   (b) In how many ways can this be done if the committee must include at least one man and at least one woman?

3. A particular carnival game has ten different prizes. To play the game, a player tosses a ball into a circular bin with concentric circular walls that make ten rings into which a ball can fall, each marked with one of the prizes. (The center region is really a circular region rather than a ring.) A player can toss as many balls as he or she wishes (of course each one costs) and the player will win the prize that corresponds to the first ring to accumulate 4 balls. What is the maximum number of tosses it could take for a player to win a prize?

4. How many of the nonnegative integer solutions of the equation \( x_1 + x_2 + x_3 + x_4 + x_5 = 43 \) satisfy the conditions \( x_1 \geq 5, x_3 \geq 7 \)?

5. How many different possible orderings of the letters in the word MISSISSIPPI are there?

6. For a particular card game with four players, the deck has 24 cards. Each player gets five cards and the remaining four are placed in a "kitty" to be used by the player who bids highest.
   How many different deals are possible?