1. There are five different teacups and three different tea saucers in the “Tea Party” store. How many ways are there to buy a cup and a saucer?

2. There are also four different teaspoons in the ”Tea Party” store. How many ways are there to buy a set consisting of a cup, a saucer, and a spoon?

3. There are three towns A, B, and C, in Wonderland. Six roads go from A to B, and four roads from B to C. In how many ways can one drive from A to C?

4. A new town called D was built in Wonderland, with three new roads from A to D and two new roads from D to C. How many ways are there to drive from A to C then?

5. There are five different teacups, three saucers, and four teaspoons in the “Tea Party” store. How many ways are there to buy two items with different names?

6. We call a natural number “totally-odd” if all of its digits are odd. How many four-digit totally-odd numbers are there?

7. We toss a coin three times. How many different sequences of heads and tails can we obtain? (A “sequence” is an ordered list, so HHT is a different sequence from HTH). How many with four tosses? Five tosses?

8. Each box in a $2 \times 2$ table can be colored black or white. How many different colorings of the table are there?

9. How many ways are there to fill in a Special Sport Lotto card? In this lotto you must predict the results of 13 hockey games, indicating either a victory for one of two teams, or a draw.

10. The Hermetian alphabet consists of only three letters: A, B, and C. A word in this language is an arbitrary sequence of no more than four letters. How many words does the Hermetian language contain?