# Activity 10.4 Permutations and Combinations

1. Space shuttle astronauts each consume an average of 3000 calories per day. One meal normally consists of a main dish, a vegetable dish, and two different desserts. The astronauts can choose from 10 main dishes, 8 vegetable dishes, and 13 desserts. How many different meals are possible?
2. The access code for a cars security system consists of four digits. The first digit cannot be zero and the last digit must be odd. How many different codes are available?
3. The starting lineup for a softball team consists of 10 players, How many different batting orders are possible using the starting lineup?
4. A horse race has 12 entries. Assuming there are no ties, how many different ways can these horses finish first, second, and third?
5. In how many distinguishable ways can the letters in the word statistics be arranged?
6. A lottery has 52 numbers. In how many different ways can 6 of the numbers be selected? Assume the order of selection is not important.
7. An area code consists of three digits. How many area codes are possible if:
8. There are no restrictions?
9. The first digit cannot be a 1 or a 0?