Exercise - Permutations and Combinations

Questions 1 and 2 refer to the following information.

A hiker is going to hike a mountain where there are four trails to the top of the mountain.

1

In how many different ways can he hike up and down the mountain?

2

If the hiker does not want to take the same trail both ways, in how many different ways can he hike up and down the mountain?

3

In how many ways can the letters of the word SUNDAY be arranged using only 3 of the letters at a time?

Questions 4 and 5 refer to the following information.

Sixteen players participated in a tennis tournament. Three players will be awarded for first, second, and third prize.

4

In how many different ways can the first, second, and third prizes be awarded?

5

How many different groups of 3 people can get prizes?

6

How many different four-letter patterns can be formed from the word MATH if the letters cannot be used more than once?