

## Probability Worksheet: Using Combinations and Permutations

1. There are 7 books of the Harry Potter series sitting mixed on the floor. Find the probability that the series will be arranged in order on the shelf.
  
2. An encyclopedia set contains 10 big fat books. Find the probability that the books will be put in alphabetical order or reverse order.
  
3. There is a tulip planting package that has 9 yellow tulips and 3 red tulips. If you select a tulip, you plant it, and then pick another. Find the probability of each event.
  - a. Event R: both are red.
  
  - b. Event R': neither are red.
  
  - d. Event B: one is yellow and one is red.
  
4. A bag contains 2 red, 4 yellow, and 6 blue marbles. Two marbles are drawn at random. Find the probability of each event.
  - a. Both are red.
  
  - b. Both are yellow.
  
  - c. Both are blue.
  
  - d. One is red and one yellow.
  
  - e. One is blue and one is red.
  
  - f. Neither is red.
  
  - g. Neither is blue.

5. Two cards are drawn at random from a 52-card deck. Find the probability of each event.

a. Both are hearts.

b. Neither is red.

c. Both are jacks.

D. Neither is a spade.