Section 11.5 Probability Using Combinations

The counting rules can be combined with the probability rules in this chapter to solve many types of probability problems. By using the fundamental counting rule, the permutation rules, and the combination rule, you can compute the probability of outcomes of many experiments.

\[ P(E) = \frac{n(E)}{n(S)} \]

Using Combinations to Compute Probability

Example 1 Stacy has the option of selecting three books to read for a humanities course. The suggested book list consists of 10 biographies and five current events books. She decides to select the three books at random. Find the probability that all three books selected will be current events books.
Example 2 What is the probability of getting 4 aces when drawing 5 cards from a standard deck of 52 cards?
Example 4 A store has six different fitness magazines and three different news magazines. If a customer buys three magazines at random, find the probability that the customer will pick two fitness magazines and one news magazine.