Math 210 Finite Mathematics

Brian Veitch • Fall 2016 • Northern Illinois University

7.4 Counting Techniques in Probability

Definition 1

Let S be a uniform sample space and let E be any event. Then,

.

Example 1

An unbiased coin is tossed six times. What is the probability that the coin will land heads

1. Exactly three times?

2. At least three times?

Example 2

You're playing with a standard deck of cards. Find the probability that

1. one card is selected and it is a king?

2. two kings are selected?

3. the five cards are selected and contain 3 kings and 2 10s?

Example 3

An exam consists of 10 multiple choice questions each having 5 choices (only one is correct). If a student randomly guesses on each question,

1. what is the probability he or she will get exactly 7 correct?

2. what is the probability you get at least 7 right?

Example 4

You have a jar with 5 green Skittles, 3 red, and 7 blue. If you select 4 skittles at random, what is the probability that you select

1. exactly one red and three blue?

2. all green?

Example 5

Two cards are selected. Find the probability that they have the same rank.