Course Number

Instructor

Date

Section 9.7 Probability

Objective: In this lesson you learned how to find the probabilities of events and their complements.

Important Vocabulary Define each term or concept.

Experiment

Outcomes

Sample space

Event

Mutually exclusive

Independent events

Complement of an event

I. The Probability of an Event (Pages 746–749)

What you should learn
How to find the probability of an event

The measure of the likelihood that an event will occur based on chance is called the _____ of an event. If an event E has $n(E)$ equally likely outcomes and its sample space S has $n(S)$ equally likely outcomes, the probability of event E is _____.

The probability of an event must be between _____ and _____.

If $P(E) = 0$, the event E _____ occur, and E is called a(n) _____ event. If $P(E) = 1$, the event E _____ occur, and E is called a(n) _____ event.

Example 1: A box contains 3 red marbles, 5 black marbles, and 2 yellow marbles. If a marble is selected at random from the box, what is the probability that it is yellow?

II. Mutually Exclusive Events (Pages 750–751)

What you should learn
How to find the probabilities of mutually exclusive events

If A and B are events in the same sample space, the probability of A *or* B occurring is given by $P(A \cup B) =$ _____.

To find the probability that one or the other of two mutually exclusive events will occur, . . .

Example 2: A box contains 3 red marbles, 5 black marbles, and 2 yellow marbles. If a marble is selected at random from the box, what is the probability that it is either red or black?

III. Independent Events (Page 752)

What you should learn
How to find the probabilities of independent events

If A and B are independent events, the probability that both A and B will occur is $P(A \text{ and } B) =$ _____.

That is, to find the probability that two independent events will occur, . . .

Example 3: A box contains 3 red marbles, 5 black marbles, and 2 yellow marbles. If two marbles are randomly selected with replacement, what is the probability that both marbles are yellow?

IV. The Complement of an Event (Page 753)

What you should learn
How to find the probability of the complement of an event

Let A be an event and let A' be its complement. If the probability of A is $P(A)$, the probability of the complement is $P(A') =$ _____.

Homework Assignment

Page(s)

Exercises