Section 9.7   Probability

| Course Number |
| Instructor |
| Date |

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 662−665)

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.

What you should learn
How to find the probabilities of events

Example :   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 666–667)

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 :   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 668)

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 :   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 669)

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