STAT 110
Chapter 18 and 19 Definitions

probability model – describes all possible outcomes and says how to assign probabilities
   to any collection of outcomes

sample space – collection of unique outcomes of a random circumstance

event – a collection of outcomes

Probability Rules
1. Any probability is a number between 0 and 1.

2. All possible outcomes together must have probability 1.

3. The probability that an event does not occur is 1 minus the probability that the event
     does occur.

4. If two events have no outcomes in common, the probability that one or the other occurs
     is the sum of their individual probabilities.

Venn Diagram*(not in text):*
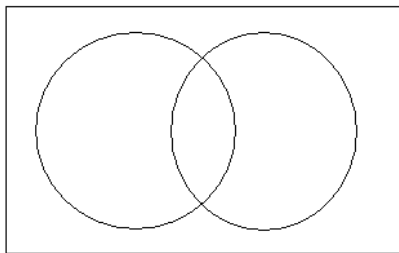
5. Multiplication Rule: If two events are independent then $P(A \text{ and } B) = P(A) \cdot P(B)$

Independence means that the occurrence of event A does not affect the occurrence of
     event B

Conditional Probability *(not in text):* $P(A|B)$ = Probability that A occurs given that B occurred

General Multiplication Rule *(not in text):* $P(A \text{ and } B) = P(A) \cdot P(A|B)$ or $P(B) \cdot P(B|A)$

Tree Diagram: Multiply the probabilities and conditional
        probabilities along the path you took to get the probability
        of finishing at that end of that path.
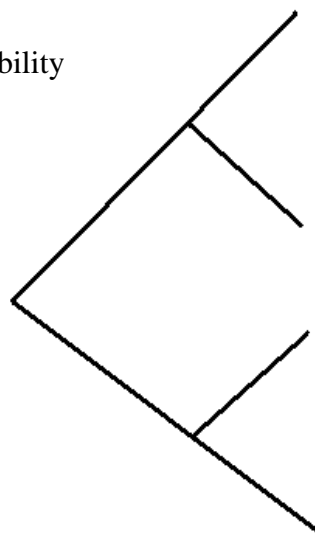
simulation – using random digits from a table or from computer software to imitate chance behavior

sampling distribution – tells what values a statistic takes in repeated samples from the
        same population and how often it takes those values