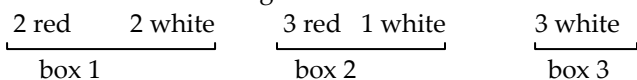


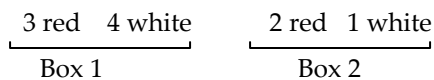
- 1) Two coins are tossed. What is the probability that at least one head will turn up? 1) _____
- 2) Suppose that a committee of two is chosen at random from the four people, Amy, Bob, Carol, and Dan. Find the probability that Amy is on the committee. 2) _____
- 3) Two dice are tossed. Find the probability of getting a sum of 7. 3) _____
- 4) A container contains 7 red marbles, 5 blue marbles and 3 white marbles. 4) _____
- a. If one marble is drawn at random from the container, find the probability that it is red.
- b. If two marbles are drawn, one at a time, without replacement, find the probability that they are both the same color.
- c. If two marbles are drawn, one at a time, with replacement, find the probability that they are both the same color.
- 5) Draw a single card from a deck of 52 cards, find the probability that the card is 5) _____
- a. red b. a club c. a king
- d. a club or a king e. a club and a king
- 6) If a man owns 5 shirts and 6 pairs of slacks, how many different shirt-slacks combinations does he have? 6) _____
- 7) In how many ways can Al, Bob, Carol, Dawn, and Ed be seated in a row of five chairs if Al is to be seated in the "middle" chair? 7) _____
- 8) How many 2-person committees can be formed from six people Amy, Beth, Candy, Dawn, Earl, and Fernando? 8) _____
- 9) Suppose that a committee of two can be formed from seven people. Find the probability that Dick is on the committee. 9) _____
- 10) From a group of 5 women and 4 men, a 2-person committee is chosen at random. Find the probability that the committee contains at least one women. 10) _____
- 11) Suppose a bag contains 5 red and 2 white marbles. We randomly draw two marbles, one at a time, without replacement. List and find the probability of all outcomes in the sample space. 11) _____
- 12) The probability that a certain horse will win the Kentucky Derby is $\frac{1}{20}$. 12) _____
- a. What is the probability that it will lose the race?
- b. What are the odds for the horse winning?
- c. What are the odds against the horse winning?

13) Three boxes containing red and white marbles are shown below. 13) _____



Randomly draw a marble from Box 1 and put it in Box 2. Then draw a marble from Box 2 and put it in Box 3. Then draw a marble from Box 3. What is the probability that the last marble drawn, from Box 3, is red? is white?

14) Two boxes with red and white marbles are shown below. 14) _____



- a. A marble is drawn at random from Box 1, and then a marble is drawn from Box 2 and the colors recorded in order. Find the probability that:
 - i. both are white
 - ii. both are red
 - iii one is red and one is white
- b. A marble is drawn at random from Box 1, placed into Box 2 and then a marble is drawn from Box 2. Find the probability that
 - i. the marble is white
 - ii. the marble is red
- c. A box is chosen at random, and then a marble is drawn from the box. Find the probability that the marble is
 - i. red
 - ii. white

15) What are the odds against rolling a double with a pair of dice? 15) _____

16) Suppose that the odds against the Cubs winning the pennant are stated as 50 to 1. What is the probability of the Cubs winning the pennant? 16) _____

17) A "wheel of fortune" is divided into four colors, red, white, blue, and yellow. The probabilities of the spinner landing on each of the colors and the money you receive is given in the chart below. The price for spinning the wheel is \$1.50. Is it a fair game? Show justification. 17) _____

Color	Probability	Money you receive
Red	$\frac{4}{10}$	\$0.50
White	$\frac{3}{10}$	\$1.00
Blue	$\frac{2}{10}$	\$2.00
Yellow	$\frac{1}{10}$	\$5.00

- 18) Your friend challenges you with the following game. You are to roll a pair of dice and he will give you \$5 if you roll a sum of 2 or 12, \$2 if you roll a sum of 3 or 11, \$1 if you roll a sum of 4 or 10, otherwise, you are to pay him \$1. Should you play the game? 18) _____
- 19) One marble of each of the following colors is placed into a hat: blue, green, orange, yellow, and purple. The five marbles are drawn from the hat one at a time without replacement. 19) _____
- How many different color sequence draws are possible?
 - How many different color sequence draws are possible with orange as the first color?
 - How many different color sequence draws are possible with orange as the first color and green as the last color?
 - What is the probability that the color sequence draws will be the same as the alphabetical listing of the colors?
- 20) How many seven digit phone numbers are possible in a particular area code if the first digit of the phone number cannot be zero and if each of the other positions can be filled with any digit from zero through nine? 20) _____
- 21) Fourteen people have been selected to be the jury on a particular case. Two of these people will be randomly chosen as alternates. Nancy Lewis and Liz Kane are 2 of the 14 people. 21) _____
- What is the probability that Nancy and Liz will be the alternates?
 - What are the odds against Nancy and Liz being the alternates?
 - Suppose that 3 people are randomly selected out of the 14. The first chosen is the chairperson of the jury. The second chosen is the first alternate. The third chosen is the third alternate. How many different groups of three are possible for these assignments?
- 22) Fifty-two seventh grade girls will be going on an overnight field trip. The principal will randomly assign four girls to each hotel room. 22) _____
- How many different groups of four are possible?
 - What is the probability that a particular group of four girls will room together?
 - Beth wants to room with Kate. What is the probability that the two girls will room together?
 - Allison, Erin, and Sara want to room together. What is the probability that the three girls will be assigned to the same room?
 - Stacey and Tracy do not want to be in the same room with each other. What is the probability that they will not be in the same room?
- 23) A high school student must take math English, physical education, science, global studies and a language. Her schedule must include a lunch and a study hall. The entire school has lunch fifth period. The school day is divided into eight periods. How many different schedules are possible that would contain these six classes and a study hall? 23) _____

Answer Key

Testname: CHAPTER7-PROBABILITIES ON WEB

1) $\frac{3}{4}$

2) $\frac{1}{2}$

3) $\frac{1}{6}$

4) a. $\frac{7}{15}$ b. $\frac{68}{210} = \frac{34}{105}$ c. $\frac{83}{225}$

5) a. $\frac{1}{2}$ b. $\frac{1}{4}$ c. $\frac{1}{13}$ d. $\frac{4}{13}$ e. $\frac{1}{52}$

6) 30

7) 24

8) ${}^6C_2 = 15$

9) $\frac{2}{7}$

10) $\frac{60}{72} = \frac{5}{6}$

11) $P(RR) = \frac{10}{21}$ $P(RW) = \frac{5}{21}$ $P(WR) = \frac{5}{21}$ $P(WW) = \frac{1}{21}$

12) a. $\frac{19}{20}$ b. 1 : 19 c. 19 : 1

13) $P(R) = \frac{7}{40}$ $P(W) = \frac{33}{40}$

14) a i. $\frac{4}{21}$ ii. $\frac{2}{7}$ iii. $\frac{11}{21}$

b i. $\frac{11}{28}$ ii. $\frac{17}{28}$

c i. $\frac{23}{42}$ ii. $\frac{19}{42}$

15) 30 : 6 or 5 : 1

16) $\frac{1}{51}$

17) Expected value \$1.40 not fair

18) Yes, fair because the expected value is 0

19) a. 120 b. 24 c. 6 d. $\frac{1}{120}$

20) 9×10^6

21) a. $\frac{1}{91}$ b. 90 : 1 c. 2184

22) a. 270,725 b. $\frac{1}{270275}$ c. $\frac{1225}{270,275}$ d. $\frac{49}{270,275}$ e. $\frac{269,500}{270,275} = \frac{220}{221}$

23) 5040