

Name \_\_\_\_\_  
Elementary Statistics

Date \_\_\_\_\_  
Period \_\_\_\_\_

**Chapter 4 Final Exam Review**  
**Probability**

\_\_\_\_\_ 1. Which of the following cannot be a probability?

- a.  $\frac{1}{2}$                       b. -1                      c. 0                      d. 1

\_\_\_\_\_ 2. The probability that you will arrive to work on time is 0.73. Find the probability that you will *not* get to work on time.

- a. 0.73                      b. 1.73                      c. 0.27                      d. -0.73

\_\_\_\_\_ 3. You brought 5 movies on a trip with you but only have time to watch 3. In how many different ways could you watch the 3 movies (assuming you don't watch the same movie twice).

- a. 1                      b. 15                      c. 60                      d. 100

\_\_\_\_\_ 4. Which approach to finding probability would meteorologists use to predict the weather forecast for tomorrow?

- a. Relative Frequency (or Empirical) Probability  
b. Classical (or Theoretical) Probability  
c. Subjective Probability

\_\_\_\_\_ 5. How many ways can you rearrange the letters in the word SENIORS?

- a. 5040                      b. 2520                      c. 42                      d. 21

\_\_\_\_\_ 6. You decide to play kickball with a group of 10 friends. In how many different ways could you choose 2 team captains from your group of friends?

- a. 45                      b. 90                      c. 20                      d. 100

**Short Answer:** *Show all work. If necessary, round your final answers to 3 significant digits.*

7. A class consists of 19 females and 15 males. If a student is randomly selected, what is the probability that the student is a female?
  
  
  
  
  
  
  
  
  
  
8. You found out a friend you went to school with has 3 children. Express the sample space of the genders of the 3 children and determine how many outcomes are possible.
  
  
  
  
  
  
  
  
  
  
9. In one high school, 43% of seniors have an iphone.
  - a. What is the probability that 4 seniors selected at random *all* have an iphone?
  
  
  
  
  
  
  
  
  
  
  - b. What is the probability that among 4 seniors randomly selected, *at least 1* of them has an iphone?
  
  
  
  
  
  
  
  
  
  
10. In order to play in a local lottery, you select 4 numbers from 1 to 50 (cannot be repeated) and those numbers may be chosen in any order to win the grand prize. What is the probability of winning?

11. A bag contains 30 marbles of which 12 are blue, 8 are purple, 6 are red, and 4 are yellow. Find each of the following probabilities:

a. Picking a purple marble then a blue marble (with replacement):

b. Picking a red marble then a yellow marble (without replacement):

c. Not picking a blue or purple marble if you select one marble:

d. Picking a red marble and a yellow marble in any order (with replacement):

e. Picking at least one blue marble on 3 picks (with replacement):

12. You play a game where you roll a die numbered 1 through 6. If you roll a 6, you win.

a. What are the odds against winning?

b. Using the odds against winning you found in part a, how much money would you win if you made a \$2 bet?

Use the following table to answer questions 13-17:

(If necessary, round your final answers to the *ten-thousandths place*)

<u>Prom Dinner Orders</u>				
	Steak	Chicken	Pasta	Totals
Male	51	34	5	90
Female	29	14	57	100
Total	80	48	62	190

13. You choose 1 out of the 190 prom guests. What is the probability that they ordered chicken at the prom.

14. You choose 1 out of the 190 prom guests. What is the probability that they were a female or ordered pasta for dinner?

15. You choose 1 out of the 190 prom guests. What is the probability that they did not order steak and are female?

16. You choose 2 out of the 190 prom guests. What is the probability that neither one ordered chicken?

17. You choose 1 out of the 190. What is the probability that they ordered steak given that they are male?