

Chapter 12 Practice Test

1. **WRESTLING** A wrestling coach divides athletes at tryouts based on weight. He then randomly selects 3 athletes in a weight class. Identify the sample, and suggest a population from which it was selected. Then classify the type of data collection used.

1. _____

2. **SHOPPING** A poll of 60 people at a mall asks, “What is your favorite clothes store?” Is the sample biased or unbiased? If biased, explain your reasoning.

2. _____

3. **SALARIES** A stratified random sample of 20 engineers is selected from all programming companies in the state. The median salary of the 20 engineers is calculated. Identify the sample and the population. Then describe the sample statistic and the population parameter.

3. _____

4. **SCIENCE** A scientist finds the volumes of some liquids in test tubes: {44, 53, 47, 49, 42}. Find the mean and standard deviation.

4. _____

5. A volleyball team has 6 players. How many different teams can be formed from 12 people if position doesn't matter?

5. _____

6. Ten people are riding horses. If the riders must stay in single file, how many ways can the first 4 positions be filled?

6. _____

There are 12 orange, 14 yellow, and 15 white golf balls in the bottom of a golf bag. Find each probability.

7. randomly selecting 2 yellow golf balls without replacement

7. _____

8. randomly selecting a single ball that is orange or a white golf ball

8. _____

9. Use the 5-number summary to construct a box-and-whisker for the data and use it to determine the shape of the distribution.
{98, 97, 101, 100, 88, 76, 51, 39, 93, 91, 92, 85, 72}

9. _____

10. Describe the center and spread of the data using either the mean and standard deviation or the five-number summary if I told you the data was positively skewed. {8, 9, 8, 8, 7, 9, 10, 9, 8, 14, 16, 19}

10. _____

11. WORK The hours worked each week this year by two employees are shown. Compare the data sets using either the means and standard deviations or the five-number summaries if I tell you both of these distributions are symmetric.

Richard
18, 22, 25, 23, 25, 20, 27, 17, 22, 23, 21

Monique
22, 18, 26, 22, 29, 15, 9, 34, 38, 8, 22

11. _____

The owner of a barber shop asked customers how many haircuts they received in a 3-month period. The results are shown in the table.

12. Find the probability that a randomly-chosen customer had 3 haircuts in the 3-month period.

Number of Haircuts	Number of Customers
1	14
2	20
3	45
4	33

12. _____

13. Find the probability that a randomly-chosen customer had fewer than 3 haircuts in the 3-month period.

13. _____

A teacher recently gave her 50 algebra students a 5-question quiz. The table shows the number of students who answered each question correctly.

14. Based on the data, what is the probability that a student from this class answered Question 3 correctly?

Question Number	Number Correct
1	45
2	15
3	32
4	40
5	29

14. _____

15. Using the data, how many of the 120 algebra students at the school who are taught algebra by other teachers would you expect to answer Question 3 correctly?

15. _____

16. You draw a card from the deck: P(seven or queen).

Mutually exclusive or not: _____ Probability: _____

16. _____

Bonus When can the number of permutations and combinations of n objects taken r at a time be equal?

B. _____