Name	Date	Per
Math 7: Populations, Samples and Bias		

1. An ice cream company wants to find out which flavors are preferred by children ages 8-14. Which is the best sample of the population to use for their survey?

- A.) a random sample of 500 girls, ages 8-14
- B.) a random sample of 500 children, ages 8-14
- C.) a random sample of 500 boys, age 14
- D.) a random sample of 500 children, any age

2. Mia's favorite color is red. She wants to find out whether most girls in her school also choose red as their favorite color. Which is the best sample of her school population to use for her survey?

- A.) a random sample of 50 children
- B.) a random sample of 50 7th graders
- C.) a random sample of 50 girls
- D.) a random sample of 50 girls who are wearing red

3. Janelle wants to know how many students at her Albany middle school follow major league baseball. Which sampling method will give the best answer to predict outcomes?

- A.) sample students at every middle school in Albany
- B.) sample every boy in her school
- C.) sample 20 students in the band
- D.) sample every tenth student at her middle school

4. A light bulb manufacturer randomly checks light bulbs. Of 1,000 light bulbs, 30 light bulbs are defective. How many light bulbs will most likely be defective in a batch of 3,500?

A.) 60 B.) 105 C.) 120 D.) 180

5. The Morgan Food Mart receives 50 dozen eggs weekly. Dan's job is to check for broken eggs. He finds that for every 50 dozen eggs, 5 eggs are broken. What is the experimental probability for the next 50 dozen? Round to the nearest whole percent.

A.) 1% B.) 5% C.) 10% D.) 15%

6. Suppose you were responsible for ordering food for a school picnic. In a random survey of 100 students, 45 students said they would eat hamburgers, 30 students said they would eat hot dogs, and 25 said they would eat pizza. There are 500 students in the school. After the picnic, there were 15 hamburgers left over, 20 hot dogs left over, and no pizzas left over. In comparing the predicted to the actual results, which of the following is accurate?

- A.) Students ate 2% fewer hamburgers than predicted.
- B.) Students ate 3% more hot dogs than predicted.
- C.) Students ate 5% more hamburgers than predicted.
- D.) Students ate the same number of pizzas as predicted.

Mr. Callahan just opened a flower shop. He took a random survey of shoppers to find out their favorite flowers and recorded the results in the table below: (use table to answer #7,8)

Favorite Flowers		
Туре	Shoppers	
Daffodil	14	
Lily	10	
Rose	24	
Daisy	12	

- 7. What is the size of the sample?
 - A.) 4

B.) 50

- C.) 60
- D.) 64

8. If Mr. Callahan expects to sell 150 bunches of flowers next week, which is the best prediction of how may bunches of daffodils he should have in his shop?

- A.) 28
- B.) 35
- C.) 42
- D.) 60

9. Which of these is NOT a random sample that would be valid to determine the favorite food of students in your school?

- A.) Five students at a local pizza parlor
- B.) Every 6h student on the school roster
- C.) Every 10th student entering school in the morning
- D.) Three students from each table in the lunchroom each lunch period

10. The Barry Company wants to order sneakers for the summer season. They want to find out what color sneakers teenagers prefer.

Part A: Which of the following survey questions is unbiased?

Survey Question 1: Do you prefer plain old white sneakers or sneakers that come in a variety of colors?

Survey Question 2: What color sneakers would teenagers like to wear?

Part B: Which of the two sampling methods listed below would better help them to collect the data?

Method 1: Select 200 random teenager ages 13-19.

Method 2: Select 200 random teenagers from all the tennis clubs in the area.