Algebra II   Name _____
Statistics 6

For each of the following identify the population, sample, parameter and statistic.

1. The mean number of un-popped popcorn kernels from 25 bags of Pop Secret microwave popcorn was 12.3.

2. In a random sample of 100 Valley Hospital employees, 93% of them had some type of college degree.

3. In a university, a survey of 1641 students found that 29% of them do not know the name of their college's mascot.

4. In a random sample of 85 high school football players from Bergen County, 2% of the players were vegetarians.

5. The average amount of 150 surveyed utility bills from Ridgewood is $276.42.

Classify the following sampling methods as voluntary response, random, systematic, stratified, cluster, or convenience.

6. In a large school district with 50 schools, all teachers from two randomly selected buildings are interviewed to determine whether they believe the students have less homework to do now than in previous years.

7. Every seventh customer entering the shopping mall is asked to select her or his favorite store.

8. Nursing supervisors are selected using random numbers in order to determine annual salaries.

9. Every 100th hamburger manufactured is checked to determine its fat content.

10. Mail carriers of a large city are divided into four groups according to gender and according to whether they walk or ride on their routes. Then 10 are selected from each group and interviewed to determine whether a dog has bitten them in the last year.

11. A group of hospitals wants to survey patients discharged this past year to obtain patient satisfaction profiles. They wish to use a sample of such patients.

a. Obtain a list of patients discharged. Divide the patients according to length of hospital stay (2 days or less, 3 – 7 days, 8 – 14 days, more than 14 days). Randomly select patients from each group.

b. Randomly select some of the hospitals, and then include all the patients on the discharge lists of the selected hospitals.

c. Obtain lists of patients discharged from all the hospitals. Number the patients, and then use a random number table to obtain the sample.

d. At the beginning of the year, instruct each hospital to survey every 500th patient discharged.

e. Instruct each hospital to survey 10 discharged patients this week and send in the results.

12. An important part of employee compensation is a benefits package. Suppose you want to conduct a survey of benefit packages available in private businesses in Hawaii. You want a sample size of 100.

a. Assign each business in the Island Business Directory a number, and then use a random number table to select the businesses to be included in the sample.

b. Use the postal Zip Codes to divide the state into regions. Pick a random sample of 10 Zip Code areas and then include all the businesses in each selected Zip Code area.

c. Use the Island Business Directory, number all the businesses. Select a starting point at random and then use every 50th business listed until you have 100 businesses.

d. Group the businesses according to type: medical, shipping, retail, manufacturing, financial, construction, restaurant, hotel, tourism, other. Then select a random sample of   10 businesses from each business type.

e. Send a survey to every business in Hawaii and use those that are sent back.