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Survey’s and Samples Worksheet

**Review Questions**

1. Brandy wanted to know which brand of soccer shoe high school soccer players prefer. She decided to ask the girls on her team which brand they liked.
   1. What is the population in this example?
   2. What are the units?
   3. If she asked all high school soccer players this question, what is the statistical term we would use to describe the situation?
   4. Which group(s) from the population is/are going to be under-represented?
   5. What type of bias best describes the error in her sample? Why?
   6. Brandy got a list of all the soccer players in the Colonial conference from her athletic director, Mr. Sprain. This list is called the what?
   7. If she grouped the list by boys and girls, and chose 40 boys at random and 40 girls at random, what type of sampling best describes her method?
2. Your doorbell rings, and you open the door to find a 6-foot-tall boa constrictor wearing a trench coat and holding a pen and a clip board. He says to you, “I am conducting a survey for a local clothing store. Do you own any boots, purses, or other items made from snake skin?” After recovering from the initial shock of a talking snake being at the door, you quickly and nervously answer, “Of course not,” as the wallet you bought on vacation last summer at Reptile World weighs heavily in your pocket. What type of bias best describes this ridiculous situation? Explain why.

In each of the next two examples, identify the type of sampling that is most evident and explain why you think it applies.

1. In order to estimate the population of moose in a wilderness area, a biologist familiar with that area selects a particular marsh area and spends the month of September, during mating season, cataloging sightings of moose. What two types of sampling are evident in this example?
2. The local sporting goods store has a promotion where every 1000th customer gets a $10 gift card.

For questions 5-9, an amusement park wants to know if its new ride, The Pukeinator, is too scary. Explain the type(s) of bias most evident in each sampling technique and/or what sampling method is most evident. Be sure to justify your choice.

1. The first 30 riders on a particular day are asked their opinions of the ride.
2. The name of a color is selected at random, and only riders wearing that particular color are asked their opinion of the ride.
3. A flier is passed out inviting interested riders to complete a survey about the ride at 5 pm that evening.
4. Every 12th teenager exiting the ride is asked in front of his friends: “You didn’t think that ride was scary, did you?”
5. Five riders are selected at random during each hour of the day, from 9 AM until closing at 5 PM.
6. There are 35 students taking statistics in your school, and you want to choose 10 of them for a survey about their impressions of the course. Use your calculator to select a SRS of 10 students. (Seed your random number generator with the number 10 before starting.) Assuming the students are assigned numbers from 1 to 35, which students are chosen for the sample?