

For questions 1 - 5, tell what the population is, the sample, the sampling design and any possible sources of bias and what the effect of that bias would most likely be, if possible.

1. The principal wants to know how many students feel they “Work Hard and Be Nice To Each Other.” He hands a survey out at the lunch line.
2. The principal also wants to know what a typical GPA is for the students. He selected 3 classrooms during 3rd period and asks all the students in the classroom for their GPA.
3. There is an important leadership meeting at the school which needs a teacher from each department. The principal goes to each department and randomly selects 1 teacher.
4. A radio station conducts a poll about the traffic situation in town. They ask listeners to call in and give their opinion.
5. The Cleveland Browns want to give away tickets to their fans. They select a random time on Tuesday and decide that for every 100th Jersey sold at their team shop, the fan gets a free ticket to a game for the next week.

6. Mr. Brust's class room gets trashed fairly often. However, he usually pretty good about making his students clean it up. In fact, at the end of the day, he selects two students randomly from each of his class periods to help clean the room. Today, He has period 1 (12 students), period 2 (8 students) and period 4 (13 students).

- a. Select the 1 student from period 4 after seeding your calculator at 22.

- b. Select the 1 student from period 1 after seeding your calculator at 23.

- c. Will every student be selected and have to clean before a student has to do it twice?

13.1 Sampling Methods

Corrective Assignment Answers

Answers:

1. The population is all of the students at the school. The sample includes all students that received the survey in the lunch line. This is a convenience sample. Bias would include undercoverage, particularly those students who didn't eat through in the lunch line that day.
2. The population is all of the students at the school. The sample includes all of the students from the 3 classes he selected. This is a cluster sample. Bias potentially includes undercoverage, especially if the classes he selects are similar in nature, but perhaps different to the rest of the school population.
3. The population is all teachers at the school. The sample would include all of the individual teachers selected for the meeting. This is a stratified sample. Not much bias, although it could be argued that smaller departments will be overrepresented because 1 teacher represents a larger proportion of their population.
4. The population is listeners of the radio station (or residents of the town). The sample would include only those who take the effort to call in. This is a convenience sample. There is most likely response bias as those with strong opinions are most likely to respond. The population is all Browns fans. (Both of them) The sample is the 100th jersey buyers that win the tickets. This is a systematic sample. Bias may include undercoverage as jersey are pretty pricey, so those that cannot afford them may be left out.
6. a. Student #6 b. Student #2 c. While it is possible, it is not likely. The numbers are random, so repetitions may occur.