A population is a group of objects or people. The population of an election is all the people who vote in that election. It is impractical to ask all the voters how they expect to vote. Pollsters select a sample, or a part of the population. In a random sample, each member of a population has an equal chance of being selected for the sample.

1. A cafeteria in a mall wants to conduct a survey on a new addition to the menu.

Which of these samples would provide the MOST representative survey of its current customers?

A survey every 100th person who enters the mall
B survey every 10th person leaving the cafeteria
C survey every 5th child who enters the cafeteria
D survey every 50th woman leaving the mall

2. A national pizza company sent a survey to its customers. The survey asked about the quality of the pizzas and side items that the company sold. Of the 1,100 customers who received the survey, 692 replied. Which statement is the best generalization about the survey results?

A Enough customers replied for the company to have accurate survey results.
B Those customers who thought the quality of the side items was poor most likely felt the quality of the pizza was poor as well.
C If more customers had replied, the results would have been very different than the results that were received.
D Not enough customers replied for the company to have accurate survey results.

3. Michael surveyed every tenth child who entered a state fair about the number of rides they planned on riding. What is the population for Michael's sample?

A every tenth child who entered the state fair
B all the people at the state fair
C all the children at the state fair
D every adult with children at the state fair

4. Maria wants to find out about how much time the students in her school spend listening to music every day. She needs to survey a random sample of students to help her figure it out. Which sampling method **best** represents the entire population of students in her school?

A surveying all the students in her class
B surveying the first 20 students who enter the school library
C surveying every second member of the school band
D surveying every tenth student who enters the school

5. Maggie wants to conduct a survey to determine the most popular theme for a school dance. She surveys students in her 7th grade math class and in her 7th grade history class, totaling 60 in sample size. Is Maggie's sample appropriate for the population?

A Yes, because she asked more than 30 people.
B Yes, because she asked all of the students in these two classes.
C No, because she only asked people in one grade level.
D No, because she asked too many students.

6. The editor of the school yearbook wants to estimate the number of students who will purchase a yearbook. Which sample is most likely to be representative of the student population?

A The first ten students who enter the school building.
B Twenty-five eighth-grade students selected at random.
C All the students who participate in the journalism club.
D Every third student on an alphabetized list of all of the school's students.

7. Susan works for the school newspaper and wants to conduct a survey to ask students whom they will vote for in the upcoming school elections. Which sample should she choose to **best** represent the entire population?

A all the students in Susan's math class
B every tenth student in the school cafeteria
C every tenth student working for the school newspaper
D all students standing for the post of president in the school elections

8. Jerry surveyed 50 randomly selected students at his school about whether or not they are planning to attend summer camp. Of the students he surveyed, 22 said they planned to go to camp. Which of the following statements is supported by Jerry's data?

A It is possible to make a prediction based on Jerry's results since the proportion of the sample wanting to go to camp is very close to the the proportion of the sample that does not want to go to camp.
B It is not possible to make a prediction based on Jerry's results since the proportion of the sample wanting to go to camp is not equivalent to the proportion of the sample that does not want to go to camp.
C It is possible to make a prediction based on Jerry's results since his sample is representative of the population.
D It is not possible to make a prediction based on Jerry's results because the sample is not representative of the population.

9. Joan wants to know how many hours of television the seventh-grade students at her school watch each week. She randomly chooses 8 students from each of the seventh-grade homerooms. What is the population of Joan's survey?

A all the students in seventh grade
B all the students at Joan's school
C the 8 students from each seventh-grade homeroom

10. For which type of survey are the responses ***most likely*** to be representative of the whole population?

A mail-in survey, where subjects can decide whether to reply
B a survey conducted among people randomly selected by a researcher
C a poll on the Internet in which individuals decide to participate
D telephone call-in polls, where a radio station asks that a number be called

11. Henry asks 100 random patrons at a local movie theater the name of their favorite movie. What population does this represent?

A movie patrons at the local movie theater
B total population of the town
C all people who go to movie theaters
D teenage movie patrons at the local movie theater

12. Which situation is the ***best*** example of valid sampling?

A surveying people at a grocery store about the efficiency of bus routes
B surveying voters in all 50 states about a proposed NC state law
C surveying middle school students about health care
D surveying homeowners about a proposed county tax on homes

13. Anne wants to survey middle school girls on their favorite weekend activities. Which sample would give Anne the ***best*** results?

A girls in Anne's gym class
B girls at the mall on the weekend
C every third girl exiting a middle school
D girls exiting a movie theater on the weekend

14. A radio station in Raleigh, NC wants to know the most popular song of the week. The DJ surveys random listeners who call in throughout the week. What is the population of the DJ's survey?

A all the people in Raleigh, N.C.
B listeners of this radio station
C the listeners who call the station
D the most popular song of the week

15. Erica wanted to conduct a survey to find the most popular ice cream flavor sold at the local ice cream shop. She decided to survey all the girls present in the shop. Is this sample representative of the population?

A Yes, it asks all the girls present in the shop.
B Yes, the sample is restricted within the shop.
C No, the sample is only about ice cream flavors.
D No, it asks only the girls in the shop.

1-B 2-A 3-C 4-D 5-C 6-D 7-B 8-C 9-A 10-B 11-A 12-D 13-C 14-B 15-D

When you do a survey, you want to ask questions that do not influence the answer. A biased question is a question that makes an unjustified assumption, or makes one answer appear better than another. Such as, "Do you think that soothing classical music is more pleasing than the loud, obnoxious pop music that teenagers listen to?" In addition having a biased question, you could have a biased sample. A sample is biased if individuals or groups from the population are not represented in the sample.

16. Which is ***most likely*** an example of a biased sample?

A asking a car-repair shop which brands of cars have the lowest costs for repairs
B determining a popular car color by collecting data for 15 minutes on a busy street
C finding out what percentage of students participate in after-school activities by asking members of the drama club
D looking at a list of customers who bought pet food to determine what percentage of pet owners have cats

17. A fashion magazine wants to study the average number of calories women consume per day. They plan to sample 50 models and find the average calories they consume. Which statement ***most accurately*** describes this study?

A The population is the readers of the magazine.
B The sample is a random sample of the population.
C The sample is biased, because the sample size is too small.
D The sample is biased, because it does not represent the readers.

18. Erica wants to determine the best location for ice cream in her town. She will conduct a survey of 100 people. Which sampling method would give Erica the ***least*** biased results?

A asking customers with children
B asking people at the grocery store
C asking people who are allergic to chocolate
D asking customers leaving a certain ice cream restaurant

19. A sports writer wants to know which is the most popular college basketball team. Which group of people would give her the ***least*** biased answer?

A every 4th person entering a college dining hall
B every 4th student watching a game being played
C every 4th student at a freshman orientation
D every 4th person entering a grocery store

20. Which scenario would produce the ***least*** biased results?

A asking athletes at a gym what their favorite television show is
B asking shoppers at a store where their favorite place to shop is
C asking fans at a baseball game who their favorite baseball team is
D asking students in a college library what their favorite college sports team is

21. At a middle school, the administration wants to know how most students get to school. Which sample would be considered a biased sample?

A every 10th student entering the cafeteria
B every 10th student getting off a bus
C every fifth student from an alphabetical list
D one student randomly chosen from every homeroom

22. Which group of people would ***most likely*** be an unbiased sample to survey about the preference of school pizza?

A cafeteria staff
B workers of a pizza restaurant
C students who bring their lunch
D random students throughout all lunch periods

23. At a middle school, the 7th graders will conduct a survey for where to go on a field trip. Which method will result in the ***least*** biased decision?

A to randomly ask 8th grade students who went on a field trip last year
B to randomly choose some 7th grade students to select a location
C to ask all 7th grade teachers and administrators for a location
D to ask the student council to choose a location

24. A local newspaper wants to know what type of music people like best. If it surveys people at random, which group would produce the ***most*** unbiased sample?

A a survey of 10 employees at a music store
B a survey of 100 people who listen to a radio station
C a survey of every fifth person who visits a music store
D a survey of every third person who calls into a radio station

25. A marketing class wants to determine the most popular fast food restaurant in their state. Which method represents the ***least*** biased survey?

A surveying every 100th household in the state
B surveying everyone in their school's cafeteria
C surveying every 5th person in one neighborhood
D surveying every 10th person in front of a local fast food restaurant

2013 EOG Question

30. Hillary and Devin will collect data to find out where the seventh-grade students should take their field trip. Which group should Hillary and Devin survey to collect the best data?

A the first 25 students through the lunch line
B ten random people from each seventh-grade class
C all the students in a dance class
D twenty of their friends

16-C 17-D 18-B 19-D 20-A 21-B 22-D 23-B 24-C 25-A EOG-B