Name _____ Date _____ Class _____

7.SP.1

SELECTED RESPONSE

Select the correct answer.

1. You want to predict which movie will be the most popular among the students at your school next weekend. To do so, you ask a sample of people at your school what movie they most want to see. Which of these methods is most likely to produce a representative sample?

   (A) Ask one student at your school.

   (B) Ask a group of students in a film class.

   (C) Ask one student from each class.

   (D) Ask several of your friends.

2. The editor of a magazine wants to know the effectiveness of advertising on readers. The editor decides to call every 50th person on the subscriber list to conduct a survey. Does the editor's method produce a representative sample? Explain. (Note: A subscriber is someone who receives every issue of the magazine in the mail. A reader is someone who reads the magazine.)

   (A) Yes. All of the magazine's readers have an equal chance of being selected.

   (B) Yes. All of the magazine's subscribers have an equal chance of being selected and the business manager needs to gain information only about subscribers.

   (C) No. Not all of the magazine's subscribers have an equal chance of being selected.

   (D) No. Not all of the magazine's readers have an equal chance of being selected.

3. A politician running for mayor in her city wants to know her chances of winning an upcoming election. To figure this out, her campaign team wants to ask a sample of people in the city who they will vote for in the election. What method is likely to give the campaign team a random sample of the population?

   (A) Ask all of the people who live in a particular neighborhood.

   (B) Ask people who live in different neighborhoods throughout the city.

   (C) Ask people who take public transportation.

   (D) Ask all of the people who shop at the same store.

Select the correct answer for each lettered part.

4. Andy has 60 orange trees in his grove that are in 6 rows of 10 trees. He wants to know how many oranges he will harvest this season but does not have time to count the number of oranges on each tree. Does the method described produce a representative sample of the trees in the grove?

   a. Assign a number to each tree and pull 8 numbers from a hat. ○ Yes ○ No

   b. Select 10 trees from the same row. ○ Yes ○ No

   c. Select 3 consecutive trees. ○ Yes ○ No

   d. Randomly select 6 trees. ○ Yes ○ No

   e. Select the trees in each corner. ○ Yes ○ No

Name _____ Date _____ Class _____

Select all correct answers.

5. Elaine is the manager of a small toy manufacturer. Her company produces 2,500 toys per week for shipment to retail stores. Elaine wants to know the percentage of toys her company produces that are defective. Which of the following methods would provide Elaine with a representative sample of the toys?

   (A) Assign a number to each toy, randomly select 100 numbers, and test the corresponding toys.

   (B) Test the first toy produced each week.

   (C) Select the first toy produced each day of the week and test them.

   (D) For each day, randomly pick 15 toys produced that day.

   (E) Test all toys produced on Friday.

CONSTRUCTED RESPONSE

6. A town has 40,249 residents. Members of a town's parks and recreation department want to know what band to book for the town's summer festival. Does the department need to ask every resident in the town to find out what band should play at the event? Explain.

   _____

   _____

   _____

7. A company with several different departments has its workers work one of three shifts each workday. The president of the company wants to know which of the three shifts the workers prefer. What is an efficient method for the president of the company to get this information?

   _____

   _____

   _____

8. Marilyn wants to know what the most popular sport is at her school. She randomly selects 12 players from the girls' lacrosse team to ask the question. Does her method create a representative sample of the population? Explain.

   _____

   _____

   _____

9. Leah wants to know the average arrival time of the students at her school. She arrives one morning at 7:30 a.m. and records the arrival times of the students that arrive between 7:30 a.m. and 8:00 a.m.

   a. Explain why Leah's sample is not a representative sample.

   _____

   _____

   b. Describe a method that is likely to produce a representative sample.

   _____

   _____

10. About 3,700 people shop in a mall during the week. The manager wants to find out some information about these customers.

    a. Explain the advantages of giving a survey to a random sample of 200 customers rather than to all of the 3,700 customers.

    _____

    _____

    b. What should the manager do to get a representative sample of the customers? Explain.

    _____

    _____