

Ready® Mathematics**Unit 5 Mid-Unit Assessment****Form A****Solve the problems.**

- 1** Karina and Juan are planning the food for a student event and want to survey a random sample of students about what food to serve. Karina suggests asking all the student soccer players, both boys and girls, about their food preferences. Juan says that this would be a biased sample. Is Juan correct? Explain.

- 2** Consider the following pairs of data sets.

- I** Data set 1: mean = 8
Data set 2: mean = 16
MAD for both data sets is 4
- II** Data set 1: mean = 8
Data set 2: mean = 16
MAD for both data sets is 8
- III** Data set 1: mean = 8
Data set 2: mean = 14
MAD for both data sets is 2
- IV** Data set 1: mean = 8
Data set 2: mean = 12
MAD for both data sets is 8

Which pair of data sets is most likely to have the greatest number of values in common? Explain.



Unit 5 Mid-Unit Assessment *continued*

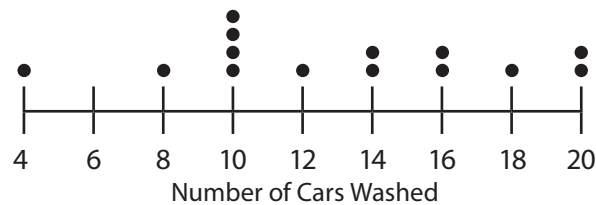
Form A

3 Mrs. Lee randomly surveyed 25 of her 125 students about their pets. Her survey indicated that 14 students have a dog, 7 students have a cat, 2 students have another kind of pet, and 8 students have no pet. (Note that some students have more than one pet). What is Mrs. Lee’s best estimate of the total number of her students who have a dog?

Show your work.

Mrs. Lee’s best estimate is that _____ students have a dog.

4 The owner of a chain of car washes at 14 locations around the city made a dot plot to see how many cars were washed at each location on a recent Saturday morning.



Calculate the mean and mean absolute deviation (MAD) for the number of cars washed at each location. Round your answers to the nearest tenth.

Show your work.

Mean = _____ MAD = _____



Unit 5 Mid-Unit Assessment *continued*

5 Describe a way to find a random sample of local parents to survey about what structures and equipment to include in a planned playground at a newly constructed park.

6 Students from two high schools competed in a county pumpkin growing contest. The weights of the heaviest pumpkins grown by students at each school are shown in the table.

Pumpkin Weights (in pounds)							
High School A	175	275	325	400	550	625	800
High School B	350	450	475	525	550	550	600

Which of these statements are true? Choose all that apply.

- A** High School B’s pumpkin weights are more consistent than High School A’s pumpkin weights, as measured by the range and interquartile range.
- B** The MAD of High School A’s pumpkin weights is more than three times the MAD of High School B’s pumpkin weights.
- C** The interquartile range of High School B’s pumpkin weights is 100.
- D** The mean weight of High School B’s pumpkins is 525 pounds.
- E** High School A produced the heaviest pumpkin but High School B’s pumpkins were heavier on average.



Unit 5 Mid-Unit Assessment *continued***Form A**

- 7** A community center employee plans to start a new after school activity for local high school students and is trying to decide whether to offer a music, sports, art, or tutoring program.

Part A

Which survey method would likely produce a representative sample of local high school students' preferences? Choose all that apply.

- A** Ask one high school participant from every sports team currently run by the community center.
- B** Ask the local high school to select every fifth pupil from an alphabetical list and ask those students to participate in a survey.
- C** Send a survey to every community center employee whose name begins with a letter in the first half of the alphabet.
- D** Mail a survey addressed to the homeowner of every fourth house within five blocks of the community center.
- E** Deliver surveys to the homes of high school students who live within one mile of the community center, addressed to the student.

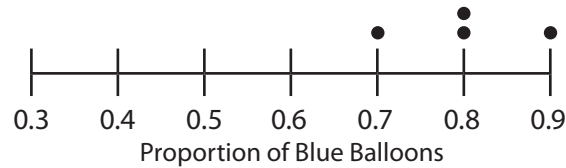
Part B

Explain why each of the survey methods you did not select in Part A would not be likely to produce a representative sample of local high school students' preferences.



Unit 5 Mid-Unit Assessment *continued***Form A**

- 8** Dara bought a bag of 500 balloons. The balloons are either blue or red, and she decides to estimate the number of blue balloons in the bag. She asks each of four friends to select a random sample of 10 balloons and then put them back in the bag. Dara organizes the data with a dot plot.

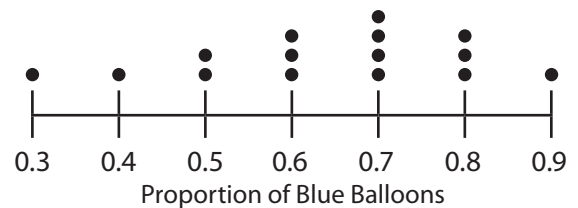
**Part A**

From the plot, what is a good estimate for the number of blue balloons in the bag? Explain.

Part B

Dara then decides to ask 11 more friends to also select a random sample of 10 balloons. She combines this data with her original data in a new dot plot.

Based on this plot, what is a good estimate for the number of blue balloons in the bag? Explain.



Part C

Would you expect your estimate based on the Part A plot or your estimate based on the Part B plot to be more accurate? Explain.
