Name: _____ Period: ____ Date: _____ **NB#29**

CCGPS Math 7th Grade Unit 4 – Inferences - Study Guide - (Day 1)

Determine the best solution and record your answer. "Show All Work"

MCC7.SP.1: Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

1. Martha is planning to survey people at a water park to determine the most popular water slide at the park. Which would be the best sample for her survey to draw a valid inference?

A. Children at the park between the ages of 3 and 5
B. Children at the park between the ages of 6 and 10
C. Adults at the park between the ages of 20 and 30
D. Adults and children of all ages at the park

2. A newspaper is conducting a survey to determine which American professional baseball team is most popular. How would you likely get a random sample that is representative of the population?

A. By asking people at a Atlanta Braves game
B. By calling people from around the country
C. By asking every fifth person entering the stadium at a Red Sox game
D. By asking people at a New York Yankees game

Use the information below for questions 3 and 4.

Mrs. Martinez just opened a flower shop. She took a random survey of shoppers to find out their favorite flowers and recorded the results in the table below.

Type	Shoppers
Daffodil	14
Lily	10
Rose	24
Daisy	12

3. What is the size of the sample?

A. 4 B. 50 C. 60 D. 64

4. If you assume that the sample is representative of the population, how many shoppers would you predict to choose roses out of 300 shoppers (hint: set up a proportion)?

A. 72 B. 120 C. 144 D. 168

Is the prediction a good prediction? _____

Explain: _____
_____
_____

5. Which of these is **not** a random sample to determine the favorite food of students in your school?

A. Five students at a local pizza parlor
B. Every sixth student on the school roster
C. Every tenth student entering school in the morning
D. Three students from each table in the lunchroom

MCC7.SP.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or stimulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by random sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.

6. The heights of five pepper plants, in centimeters, selected at random from a greenhouse with 50 pepper plants are shown below.

20, 24, 18, 23, 26

Which is a reasonable prediction of the **mean** height of all the pepper plants in the nursery?

A. 19 cm B. 22 cm C. 25 cm D. 26 cm

7. Carla runs for exercise several days each week. The number of miles she ran each week for the last 6 weeks is shown below.

10, 9, 8, 14, 9, 12

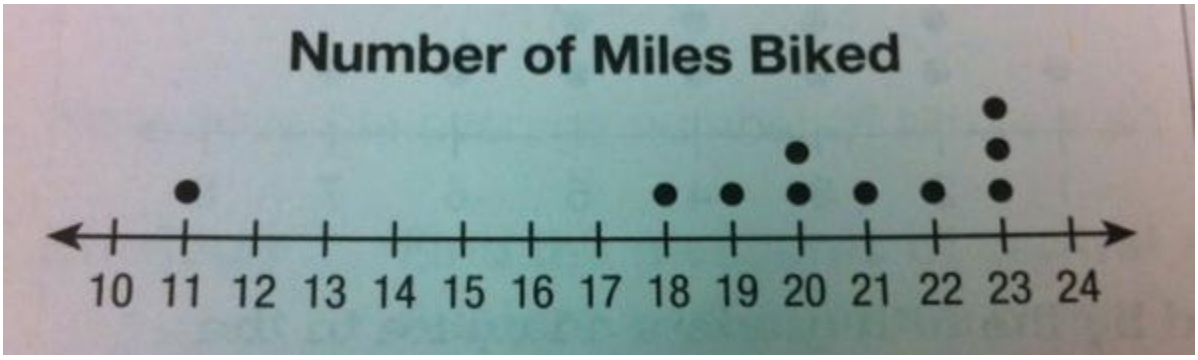
Which is a reasonable prediction of the **mean** number of miles Carla runs each week throughout the year?

A. 14 B. 13 C. 12 D. 10

MCC7.SP.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.

Use the dot plot for questions 8 – 10

The dot plot shows the number of miles Jamal biked per week for ten weeks.



8. What is the mean number of miles that Jamal bikes per week?

A. 20 miles B. 20.5 miles C. 21 miles D. 23 miles

9. What is the median number of miles that Jamal bikes per week?

A. 19 miles B. 20 miles C. 20.5 miles D. 21 miles

10. Which measure of central tendency best represents the number of miles that Jamal bikes per week?

A. mean or mode
B. mean or median
C. median or mode
D. mean, median, or mode

Use the tables for questions 11 – 12.

The tables show the quiz scores of students in two seventh grade social studies classes.

Quiz Scores

Class A

9	8	8	9
10	9	8	10
9	9	10	

Class B

9	10	8	10
10	9	10	6
5	7	8	10

11. Which best describes the comparison between the mode quiz scores?

A. The modes are the same.
B. The mode score for Class A is 2 points higher than for Class B.
C. The mode score for Class A is 1 point higher than for Class B.
D. The mode score for Class A is 1 point lower than for Class B.

12. Which best describes the comparison between the mean quiz scores? (round to the nearest tenth)

A. The means are the same.
B. The mean score for Class A is 0.5 point higher than for Class B.
C. The mean score for Class A is 1 point higher than for class B.
D. The mean score for Class A is 1 point lower than for Class B.