

Student:

Class:

Date:

Statistics & Probability Study Guide

Part 1

1. Which of these can be considered a statistical question?

- A. What is today's date?
- B. How wide is Main Street?
- C. What color is the fire truck that is parked in the garage?

These will only have one correct answer

- ☒ D. What is the number of pets owned by each of the students in a classroom?

this data will contain variability

Statistical Question

• can be answered by collecting data
• contains variability

2. A student will ask his classmates one survey question. Which of the following is a statistical question that should result in varied responses?

- A. What is the length of a meter stick in centimeters?
- B. What is the total number of feet in 8 yards?
- ☒ C. What is the sum of the digits in your telephone number?
- D. What is the total number of eggs in 5 dozen?

3. Timothy is writing a survey. How could Timothy ask a statistical question?

- A. He could ask his younger sister how many toys she has.
- B. He could ask each person in his class who the tallest person in the class is.

One correct answer

- ☒ C. He could ask each member of his family what their favorite color is.
- D. He could ask his teacher what the highest grade she has ever given was.

varied answers

→ one correct answer

4. Which statistical question will have the **least** variability?

- ☒ A. How many pets does each sixth grade student own?
- B. How many movies has each sixth grade student seen?
- C. How many songs does each sixth grade student download?
- D. How many hours does each sixth grade student spend playing video games?

although there will be variability in the data, the pets owned by an individual will normally fall with

in a certain range with less variability.

These answers will vary widely!

5. Anjali's class conducted surveys of the 6th grade students in her school. Which survey question will most likely result in data with little or no variability?

- A. What is your height?
- B. What is your shoe size?
- ☒ C. How many minutes is your lunch break at school?
- D. How many minutes does it take you to get to school?

→ school lunch breaks are decided by administration. Most students answers will be the same.

6. Students in the 6th grade were asked the following question.

In what year was George Washington elected president?

Why is the question **not** a statistical question?

- A. It is about only one person.
- ☒ B. It has only one correct answer.
- C. It is not about a current event.
- D. It would be answered with an opinion.

7. Megan asked her friends how many pets they own. She created the data set below from their answers.

2, 3, 3, 4, 4, 4, 5, 5, 6

→ median

Which question could be answered by studying the distribution of the data set?

- ☒ A. What is the median number of pets?
- B. What is the mean number of dogs?
- C. What are the ages of the pets?
- D. What is the number of cats?

This was not asked

we don't know what kind of pet each student has

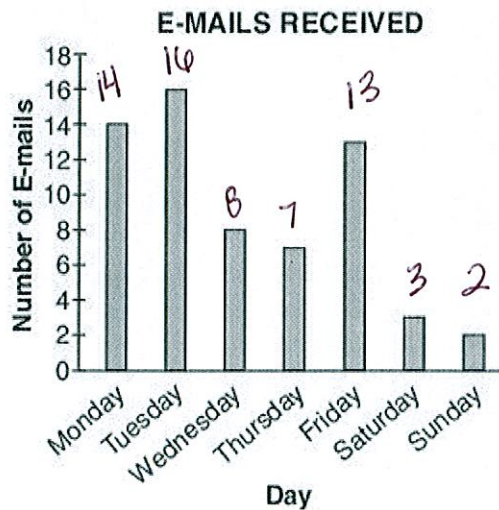
median = the middle number(s) in a set of data, when organized least to greatest

8. A student conducts a survey of the number of pets owned by students. Which representation could not be used to find the mean?

- ☒ A. a box plot
- B. a line plot
- C. a stem-and-leaf plot
- D. a bar graph

→ Can't find the mean of a data set using a box plot because it does not give you all of the numbers

9. Ms. Wong recorded the number of e-mails she received each day last week and displayed the data in the graph below.



mean → add each data point. Divide the sum by how many numbers there are.

$$14 + 16 + 8 + 7 + 13 + 3 + 2 = 63$$

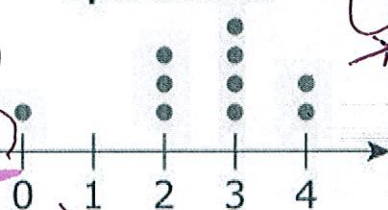
$$\frac{63}{7} = 9$$

What is the mean of the set of data?

- A. 8
- ☒ B. 9
- C. 14
- D. 16

10. Julie asked 10 of her friends how many sports they play. Then she created a data set of their answers. The distribution of the data set is represented by the dot plot below.

Sports Data



Which statement is true?

- A. Three of Julie's friends play 4 sports.
- B. Most of Julie's friends play 2 sports or less.
- C. The median number of sports played by Julie's friends is 1 less than the mean.
- ☒ D. The range of the number of sports played by Julie's friends is 1 more than the median.

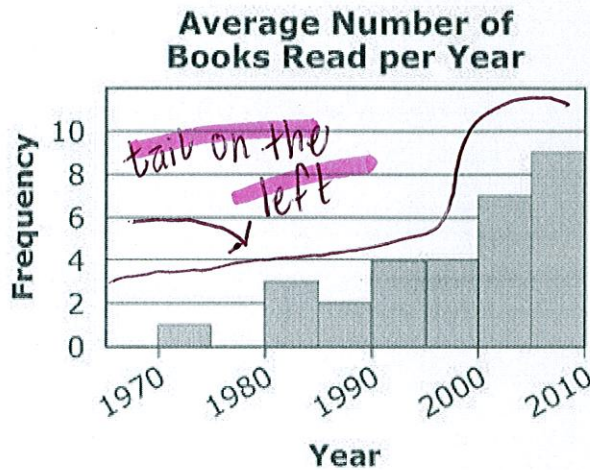
0, 2, 2, 2, 3, 3, 3, 3, 4, 4

$$\text{median} = \frac{3+3}{2} = \frac{6}{2} = 3$$

$$\text{mean} = 2.6$$

The median is not less than the mean.

11. Below is a histogram showing the average number of books Dan read each year from the time he was 10 until he was 50.



Data can be skewed, meaning it tends to have a long tail on one side or the other.

- Tail or back of data is on the left = left skewed
- Tail or back of data is on the right = right skewed

Which answer is an accurate description of the graph?

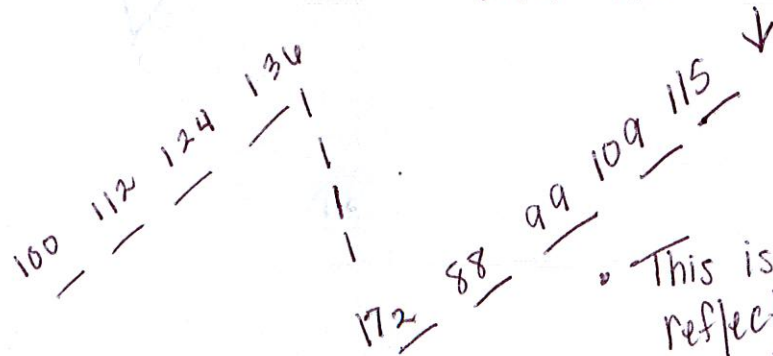
- A. Normally distributed
☒ B. Skewed left
 C. Skewed right
 D. Bimodal

12. The manager of a toy store made a table to find out when customers were buying more hula hoops.

Hula Hoop Sales

Month	Number Sold
September	100
October	112
November	124
December	136
January	72
February	88
March	99
April	109
May	115

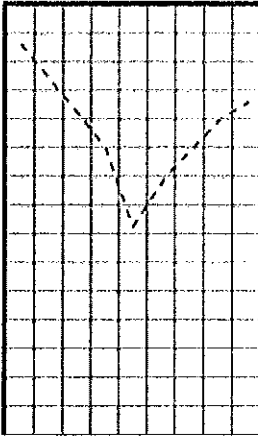
- The data steadily increases, drops, then increases



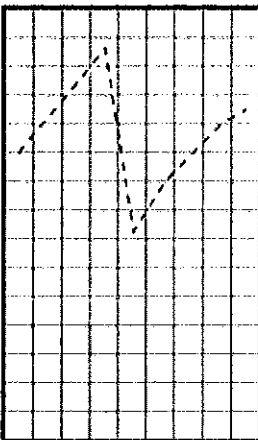
Which graph best represents the overall shape of the distribution of the data in the table?

• This is reflected on the line graph answer choice B.

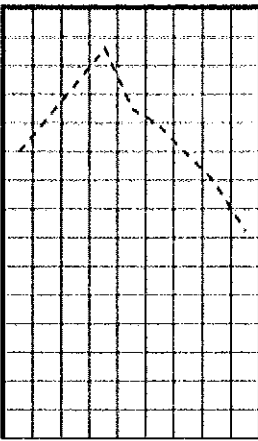
A.



B.



C.



D.

