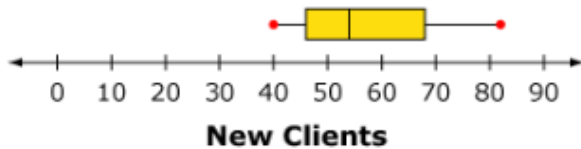




Level 2: Statistics and Probability Posttest

Question 1:

This box plot shows the number of new clients for advertising agency each year over a 7-year period.

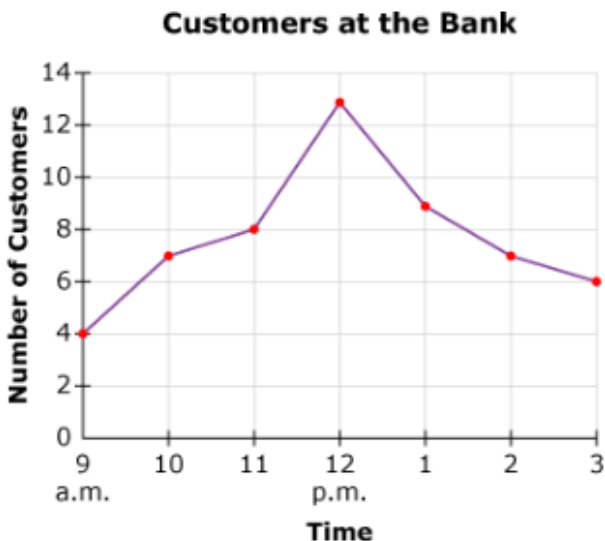


Which of the following could be the list of figures used to create the plot?

- a. 40 46 51 54 60 68 82
- b. 46 48 54 56 60 64 68
- c. 46 47 48 52 54 63 68
- d. 40 42 51 54 68 70 82

Question 2:

This graph shows the number of customers waiting in line at the bank at different times during a day.



Each point on the graph represents a recorded number of customers.

- a. how often did the bank employees count the number of customers?
- b. every 30 minutes
- c. every hour
- d. every hour and one-half
- ☐ every 2 hours



Question 3:

To create an advertising plan, Wendy collected statistical data about a company. She made a histogram to analyze the data.

Which of the following could be the question Wendy asked to collect the data?

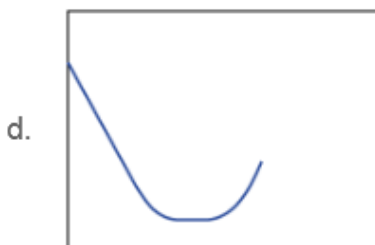
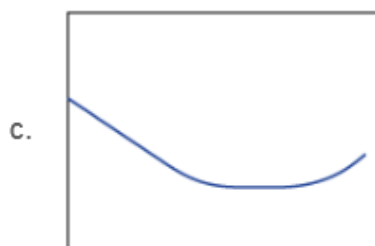
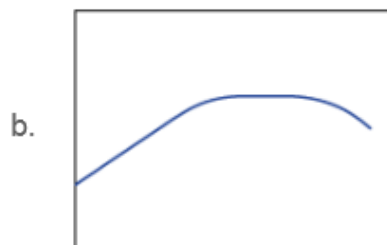
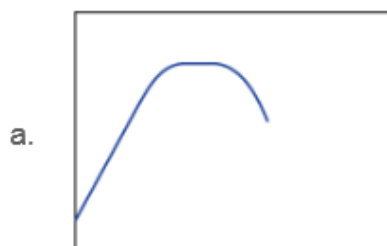
- a. What are the ages of the customers who bought your product last year?
- b. How much did you spend on advertisements last year?
- c. How much was the company's total profit last year?
- d. Which product was most popular with customers last year?

Question 4:

The graph shows the relationship between advertising and profit.



Which of the following shows how using a smaller interval for the x-axis could change the shape of the graph?





Question 5:

Why is interquartile range useful when describing a data set?

- a. It shows the minimum and maximum values.
- b. It tells about the middle half of the data.
- c. It tells the difference between the mean and median.
- d. It shows which outliers should be ignored.

Question 6:

Norma counts and records the number of cookies in 6 different snack packs.

- The range of her data set is 6 to 24.
- The median of her data set is 15.
- There is no mode in her data set.
- Each of the values in her data set is a whole number.

Which number(s) must be in Norma's data set? (Mark all that apply.)

- ☐ 6
- ☐ 10
- ☐ 15
- ☐ 16
- ☐ 20

Question 7:

The list shows the cost in dollars for a 30-second ad during 7 different radio programs.

275 325 350 495 368 347 300

Which number is an outlier?



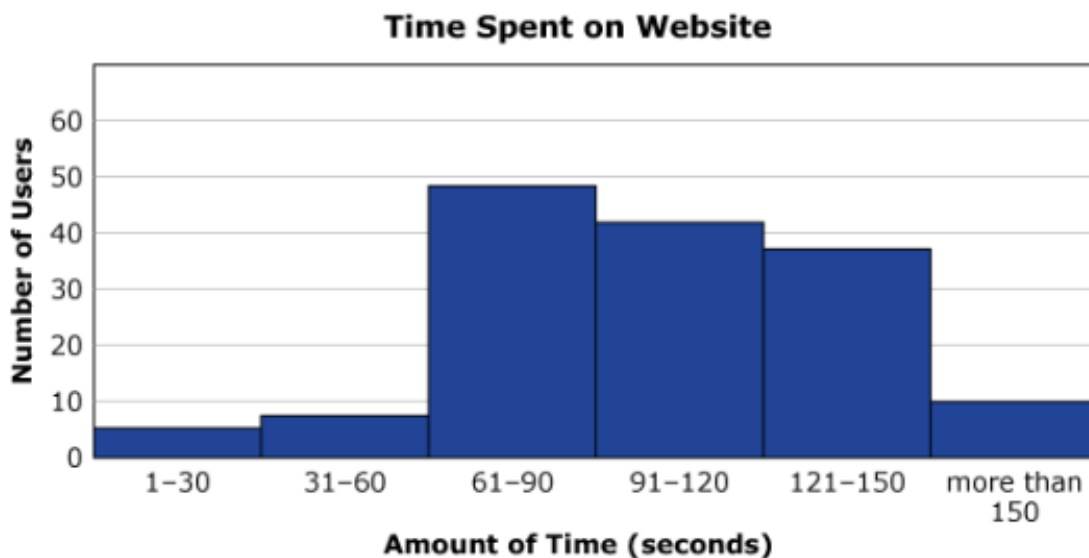
Question 8:

Which survey question will **most likely** produce categorical data with the greatest variability?

- a. What color are your eyes?
- b. In what month were you born?
- c. How many living relatives do you have?
- d. Where did you go on your last trip out of town?

Question 9:

A company's website records how much time users spend on the site. The histogram shows the amount of time the first 150 users spent on the site.

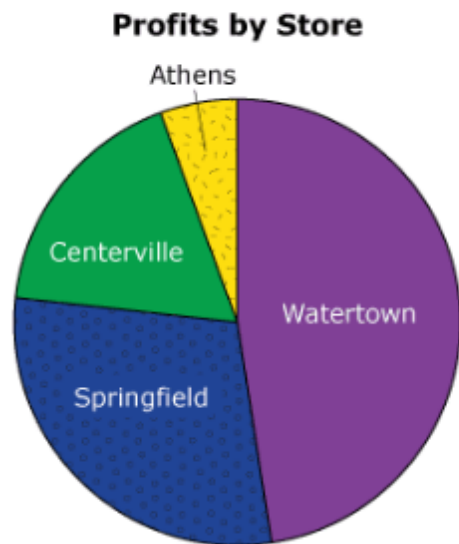


Which statement describes the data shown in the histogram?

- a. The mean is 75 seconds.
- b. The range is 1 to 160 seconds.
- c. The mode is between 61 and 90 seconds.
- d. The median is between 91 and 120 seconds.

Question 10:

Marcos owns stores in four different locations. The graph shows the portion of his total profits from each store last year.

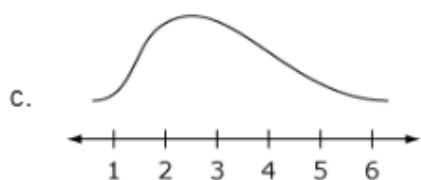
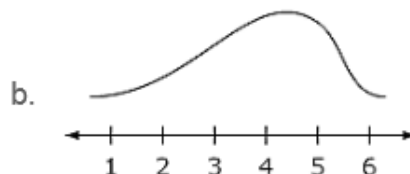
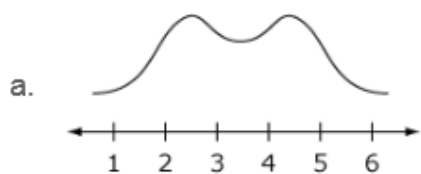


Marcos made \$24,500 in profits at the Watertown store and \$15,000 in profits at the Springfield store. About how much did he make in profits at the Athens store?

- a. \$39,500
- b. \$9,500
- c. \$3,000
- d. \$500

Question 11:

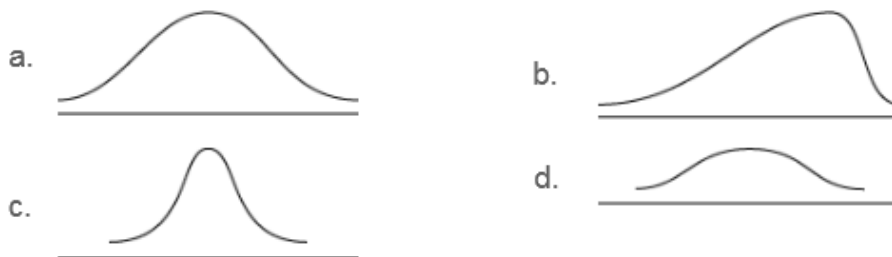
Which graph shows data for which both the median and mode are less





Question 12:

Which graph displays data with the smallest mean absolute deviation?



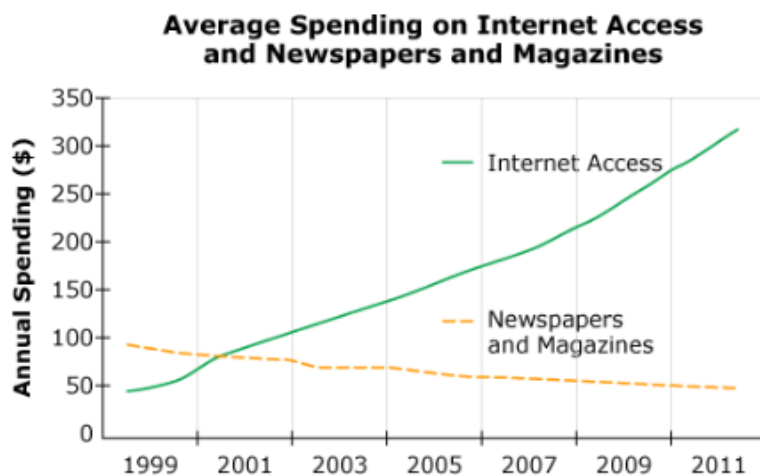
Question 13:

Which measure of variability is affected **least** by outliers in the data set?

- a. range
- b. interquartile range
- c. mean absolute deviation
- d. It is impossible to predict without analyzing the data.

Question 14:

The graph compares how much people spend for Internet access to how much they spend for newspapers and magazines.



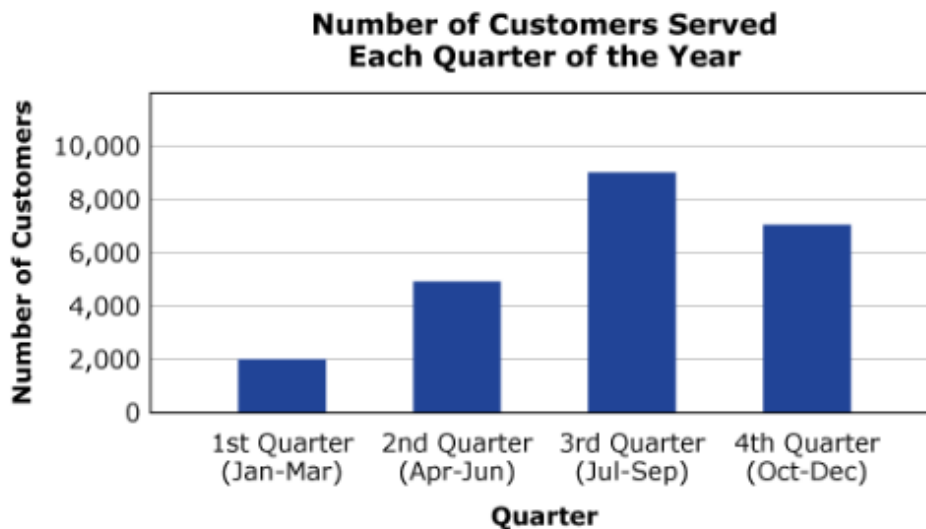
Which conclusion is supported by the graph?

- a. 2001 was the first year people spent more for internet access than for newspapers or magazines.
- b. Spending on newspapers and magazines has decreased since 2001.
- c. Spending for internet access has increased since 2001.
- d. All of the above are supported by the graph.



Question 15:

The bar graph shows the number of customers served in a restaurant each quarter of the year.



Which of the following is closest to the total number of customers served all year?

- a. 20,000
- b. 21,500
- c. 23,000
- d. 26,000

Question 16:

Lucy collected data at her school based on a statistical question. She made a histogram to analyze her data.

Which question might Lucy have asked?

- a. How many students are in Lucy's school?
- b. How tall is the tallest building in Lucy's school?
- c. What is the area of the playground at Lucy's school?
- d. What are the heights of the students in Lucy's school?



Question 17:

The frequency table below gives information about the rainfall totals in a city during the month of January.

January Rainfall

Amount of Rain (inches)	Number of Days
0–0.1	8
0.2–0.5	12
0.6–1.0	7
1.1 or over	4

Which type of data display is most appropriate to display the information?

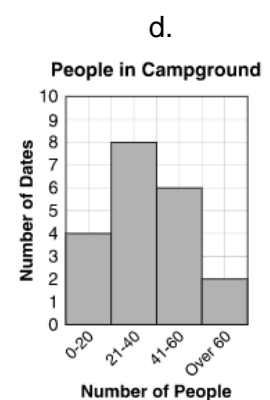
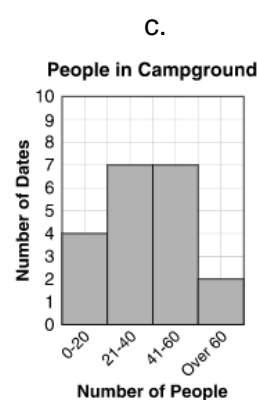
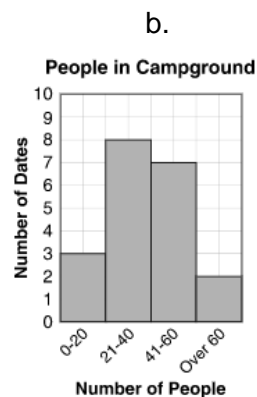
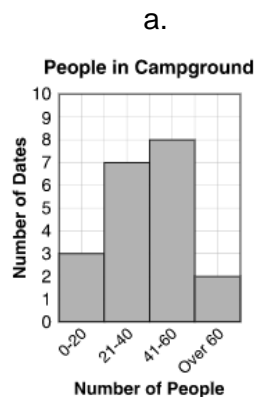
- a. box plot
- b. line plot
- c. histogram
- d. line graph

Question 18:

The total number of people camping at a campground on 20 different dates are shown below.

48 30 56 65 50 28 26 44 32 23
19 46 53 16 62 26 35 39 58 14

Which histogram correctly summarizes the data?



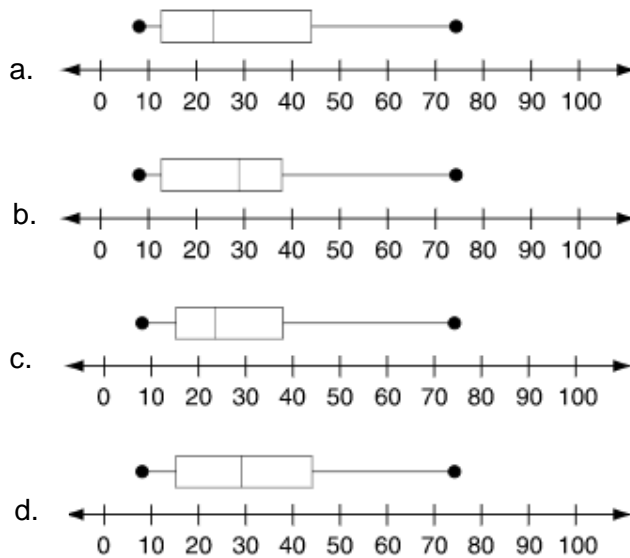


Question 19:

A fisherman caught 10 fish in one month. Their weights, in pounds, are shown below.

8 12 16 17 22 24 29 38 45 74

Which box plot **best** summarizes the data?

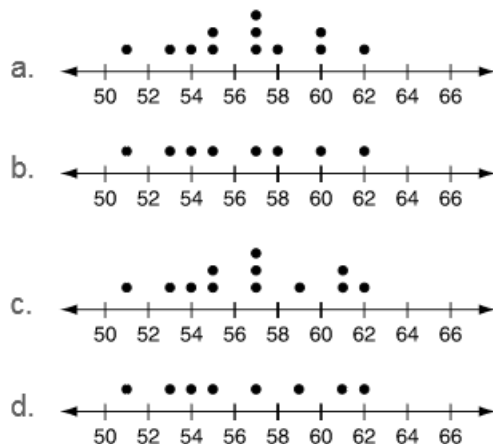


Question 20:

The heights, in inches, of 12 students in Jeremy's class are shown below.

54 60 55 53 51 58 57 60 57 62 55 57

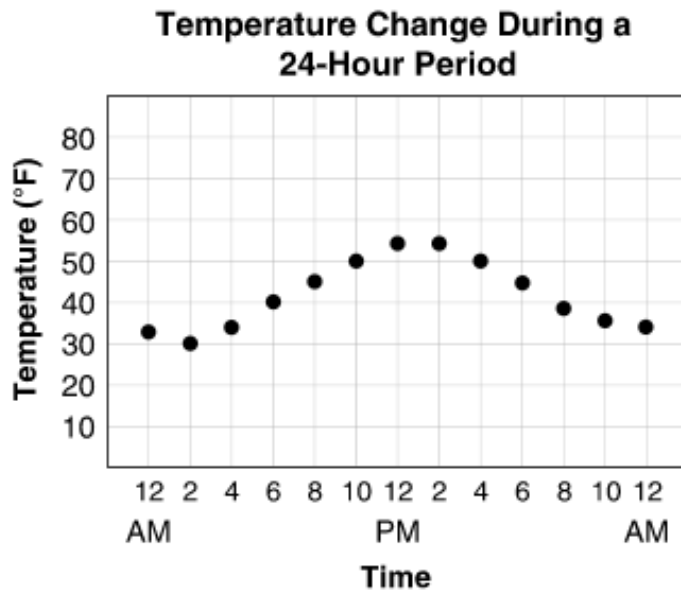
Which dot plot correctly shows the data?





Question 21:

The graph below shows how the temperature in a city changed during a 24-hour period.



Each dot on the graph represents a recorded temperature.

Which of the following is closest to the mean of the recorded temperatures?

- a. 42°F
- b. 34°F
- c. 30°F
- d. 12°F



Question 22:

The table below lists the 2010 population data for the world's 10 most populous countries.

Ten Most Populous Countries

Country	Population (millions)
Bangladesh	164
Brazil	193
China	1,338
India	1,189
Indonesia	235
Japan	127
Nigeria	158
Pakistan	185
Russia	142
United States	310

What was the median population of the world's 10 most populous countries in 2010?

- a. 181 million
- b. 189 million
- c. 404 million
- d. 1211 million



Question 23:

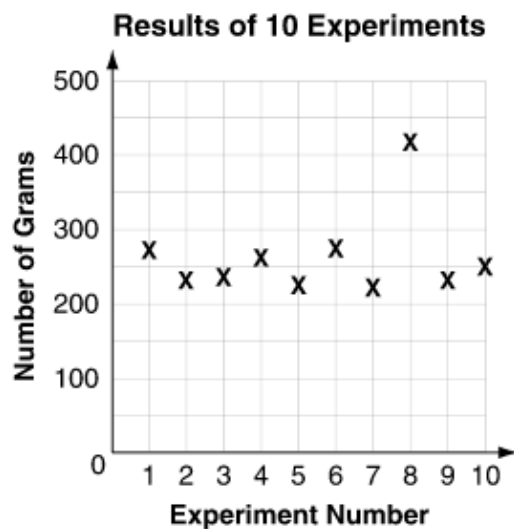
A women's basketball coach is ordering new shoes for her players. She made a list of the players' shoe sizes.

Which of the following would be **most** helpful to the coach when ordering new shoes?

- a. finding the median shoe size
- b. finding the range of shoe sizes
- c. constructing a histogram of the shoe sizes
- d. constructing a dot plot of the shoe sizes

Question 24:

A chemist performed an experiment 10 times. The graph below shows the results.



Which measure **best** represents the data?

- a. the mean, because there is an outlier for the data
- b. the median, because there is an outlier for the data
- c. the mean, because there are no outliers for the data
- d. the median, because there are no outliers for the data



Question 25:

Ginny is performing in a gymnastics competition. The list below shows the scores from 6 judges for her performance.

8.2, 8.0, 7.6, 7.8, 7.8, 8.6

What is the mean of Ginny's scores?

Question 26:

The table below shows the number of employees at a company in each of four salary ranges.

Annual Salaries for Four Groups of Employees

Group	Salary Range (Dollars)	Number of Employees
1	0 – 24,999	10
2	25,000 – 29,999	6
3	30,000 – 34,999	4
4	35,000 or more	2

In which group is the median salary for the employees of the company?

- a. Group 1
- b. Group 2
- c. Group 3
- d. Group 4



Question 27:

The table below shows the number of customers at a flower shop each day during a 6-day period.

Number of Customers for 6 Days

MON	TUES	WED	THU	FRI	SAT
38	24	55	62	80	102

What is the range for the data in the table?

Question 28:

The table below shows the ages of the volunteers at a food bank on two different days.

Ages of Volunteers

Ages on Day 1	Ages on Day 2
24, 33, 19, 66, 43	38, 24, 52, 75, 41

How many years greater is the mean of the ages for day 2 than the mean of the ages for day 1?

 years