

AP Statistics - Graphs of Quantitative Data and Shape - Quiz

Common Core AP STAT 1.4, AP STAT 1.5, HSS-ID.A.1, HSS-ID.A.3 · maths-pdf.fr/en/

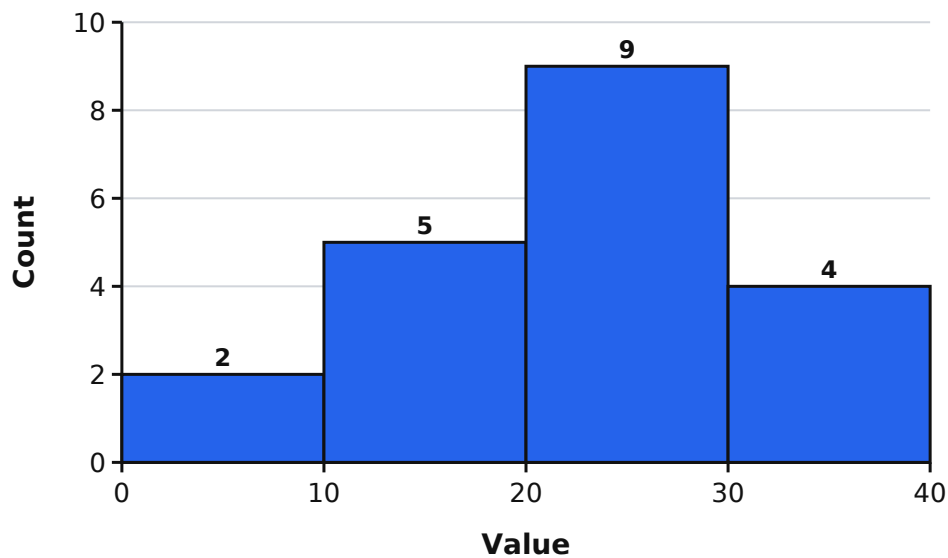
Name: _____ Class: _____ Date: ____/____/____

Ten multiple-choice questions check how you read dotplots and histograms and how you name shapes. Read every explanation to see the typical mistake.

AP Statistics · Common Core State Standards: **AP STAT 1.4, AP STAT 1.5, HSS-ID.A.1, HSS-ID.A.3**

Questions

Question 1



Histogram of 20 values.

How many values are 20 or more?

- A. 9
- B. 4
- C. 20
- D. 13

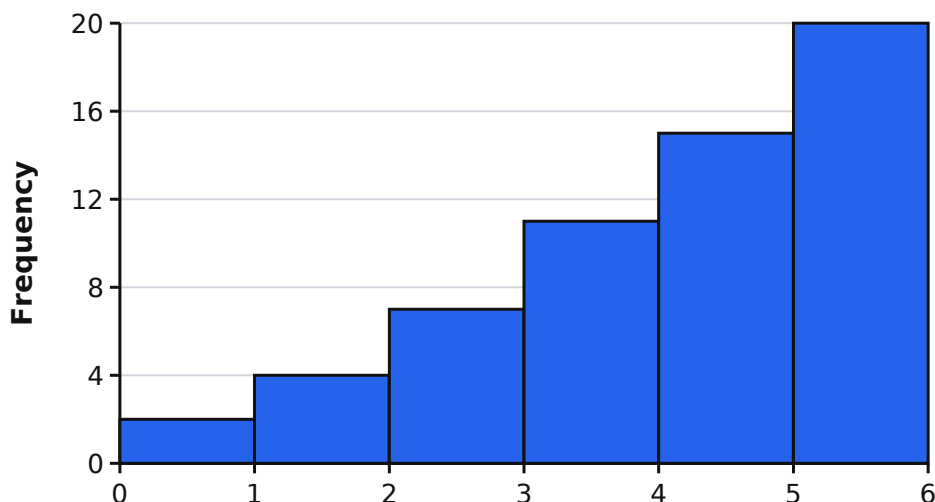
Question 2

A histogram of a quantitative variable has bars that:

- A. are separated, to show categories

- B. touch, because the axis is a number line
- C. must be different widths
- D. show only the median

Question 3

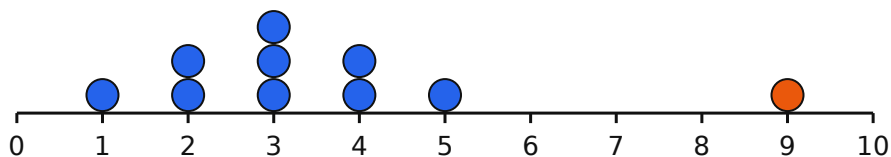


A histogram of exam scores.

What is the shape of this distribution?

- A. Skewed left
- B. Skewed right
- C. Symmetric
- D. Bimodal

Question 4



A dotplot of 10 values.

What does the value 9 represent in this dotplot?

- A. The median
- B. A potential outlier separated by a gap
- C. The mode
- D. A cluster

Question 5

Which description of a distribution is complete?

- A. Looks like a hill
- B. The graph goes up and down
- C. Skewed right with an outlier at 90, center about 65, and values from 61 to 68 otherwise
- D. The mean is 65

Question 6

A distribution has two distinct peaks. It is:

- A. uniform
- B. skewed right
- C. unimodal
- D. bimodal

Question 7

A histogram has bars of height 4, 9, 14, 8, 3, 2. How many values are summarized?

- A. 14
- B. 6
- C. 40
- D. 20

Question 8

Which graph keeps every individual data value?

- A. A stemplot
- B. A histogram
- C. A boxplot
- D. A pie chart

Question 9

A relative frequency histogram has the same shape as the frequency histogram because:

- A. the bar widths change
- B. all counts are divided by the same total
- C. the median changes
- D. the data are removed

Question 10

A right-skewed distribution has a long tail toward the:

- A. larger values
- B. smaller values

- C. center
- D. median

Answers

1. **D** – Values of 20 or more are in the last two bars: $9 + 4 = 13$. Counting only the bar that starts at 20 gives 9.
2. **B** – Intervals of a numerical scale run into each other, so bars touch. Gaps are for bar graphs of categorical data.
3. **A** – The tail extends to the left, toward the small values, so the distribution is skewed left. Many students pick right because the tall bars are on the right.
4. **B** – 9 is far above the others, separated by a gap of 4 from the next value, so it is a potential outlier.
5. **C** – A complete description mentions shape, outliers, center, and spread in context. The others omit most of the required features.
6. **D** – Two peaks means bimodal. A uniform distribution is flat and a unimodal one has just one peak.
7. **C** – Add the bar heights: $4 + 9 + 14 + 8 + 3 + 2 = 40$. The tallest bar gives only one interval.
8. **A** – A stemplot lists each leaf, so the original data can be recovered. A histogram only shows counts within intervals.
9. **B** – Dividing by n rescales the vertical axis only. The pattern of the bars stays the same.
10. **A** – Skew is named for the direction of the tail. Right-skewed data have a few unusually large values.

Remember

- Dotplots and stemplots show every value; histograms group values into equal-width bins.
- Histogram bars touch because the horizontal axis is a numerical scale.
- Describe a distribution with shape, outliers or unusual features, center, and spread.
- A long tail to the right means skewed right; to the left means skewed left.
- Mention peaks, gaps, and clusters, and always answer in the context of the data.