

AP Statistics · Exploring One-Variable Data · Test

Common Core AP Statistics Unit 1 (2026-27) · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This ap statistics one variable test checks exploring one-variable data in 45 minutes, with 8 questions for a total of 20 points.

This test has 8 free-response questions worth 20 points in all, in the style of the AP Statistics exam. Work in complete sentences, show every calculation, and give answers in the context of each problem. A calculator is allowed. Plan on about 45 minutes.

Test information

- **Grade:** AP Statistics
- **Chapter:** Exploring One-Variable Data
- **Common Core:** AP Statistics Unit 1 (2026-27)
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 3 pts; Question 3: 3 pts; Question 4: 2 pts; Question 5: 2 pts; Question 6: 3 pts; Question 7: 2 pts; Question 8: 3 pts)

AP Statistics One Variable Test: questions 1-5

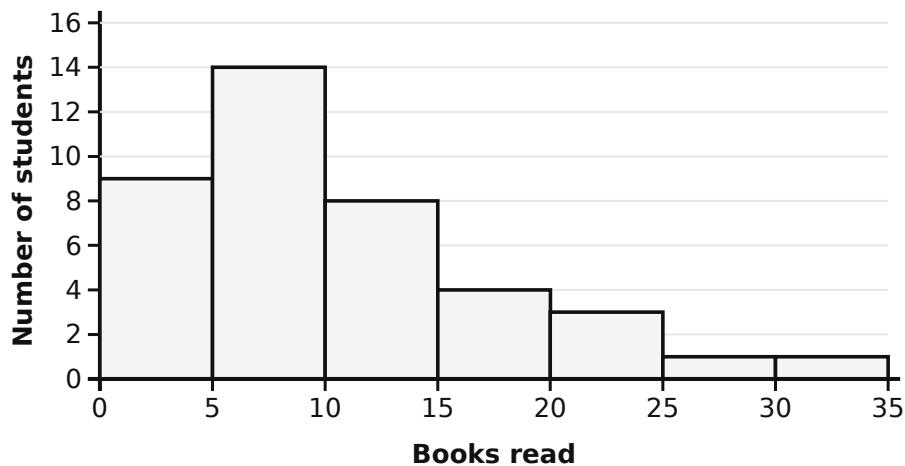
Question 1: Types of variables (2 points)

A researcher records three variables for each of 120 students: (i) grade level (9, 10, 11 or 12), (ii) hours of sleep last night, (iii) favorite sport.

- Classify each variable as categorical or quantitative. (1 point)
- Name one appropriate graph for (ii) and one for (iii). (1 point)

Question 2: Describe a histogram (3 points)

The histogram shows the number of books read over the summer by 40 students.



Books read over the summer by 40 students.

- Describe the shape, center and spread of the distribution in context. Use measures appropriate to the shape. (2 points)
- Is the mean greater than, less than, or about equal to the median? Justify. (1 point)

Question 3: Quartiles and outliers (3 points)

Aisha's points per game over 14 games were 12, 15, 16, 18, 19, 20, 21, 22, 24, 25, 27, 29, 31 and 58.

- Find the five-number summary. (1 point)
- Determine whether 58 is an outlier. Show the calculation. (1 point)
- If 58 is removed, which changes more, the mean or the median? Justify with the new values. (1 point)

Question 4: Standard deviation (2 points)

Noah's sleep times (hours) on five nights were 4, 7, 9, 12 and 13.

- Calculate the mean. (1 point)
- Calculate the sample standard deviation to the nearest hundredth. (1 point)

Question 5: Compare standardized values (2 points)

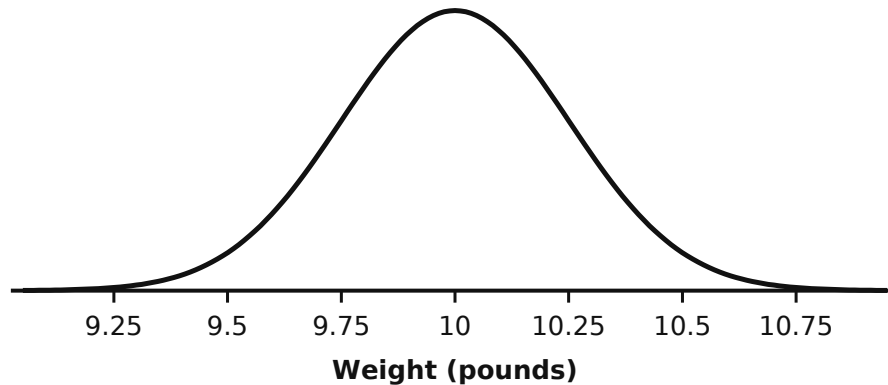
Aisha ran a mile in 7.2 minutes; her team's times have mean 8.4 minutes and standard deviation 0.8 minutes. She also swam 100 yards in 62 seconds; the swim team's times have mean 70 seconds and standard deviation 6 seconds. For both events, a lower time is better.

- Calculate the z-score for each performance. (1 point)
- In which event was Aisha's performance better relative to her teammates? Explain. (1 point)

AP Statistics One Variable Test: questions 6-8

Question 6: Normal model percentages (3 points)

The weights of bags of potatoes are approximately normal with mean 10.0 pounds and standard deviation 0.25 pounds.



Weights of bags of potatoes (approximately normal).

- About what percent of bags weigh between 9.5 and 10.5 pounds? (1 point)
- About what percent weigh more than 10.25 pounds? (1 point)
- A bag weighs 9.4 pounds. Is it unusual by the rule that values more than 2 standard deviations from the mean are unusual? Justify. (1 point)

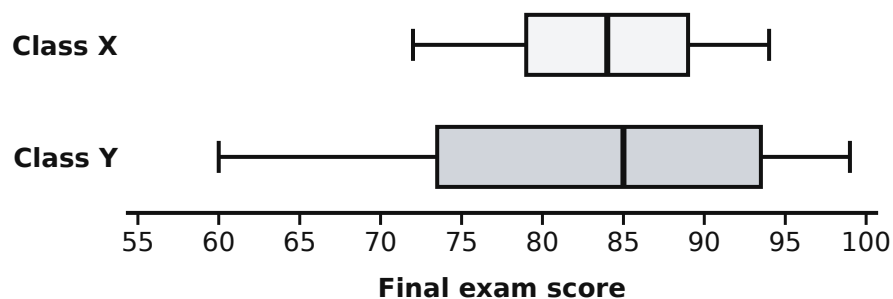
Question 7: Percentile of a normal value (2 points)

Scores on a national assessment are approximately normal with mean 500 and standard deviation 100.

- What z-score corresponds to the 80th percentile? (1 point)
- What score is at the 80th percentile? (1 point)

Question 8: Compare two classes (3 points)

Two classes of 12 students took the same final exam. The boxplots show the scores.



Final exam scores for two classes of 12 students.

Compare the distributions of scores for the two classes. Address center, spread and shape. (3 points)

How to use this ap statistics one variable test

Take this ap statistics one variable test without notes, then grade it with the test answer key out of 20 points.

