

Algebra 1 · Statistics: Center, Spread and Data Displays · Test

Common Core S-ID.A.1, S-ID.A.2, S-ID.A.3 · mathovore.fr

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

This test covers dot plots, histograms and box plots, and the mean, median, IQR and standard deviation. It has 8 questions worth 20 points in total. Show your work, use the median of each half for quartiles, and write comparisons in context. A calculator is allowed. You have 45 minutes.

Test information

- **Grade:** Algebra 1
- **Chapter:** Statistics: Center, Spread and Data Displays
- **Common Core:** S-ID.A.1, S-ID.A.2, S-ID.A.3
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 3 pts; Question 3: 2 pts; Question 4: 2 pts; Question 5: 3 pts; Question 6: 2 pts; Question 7: 3 pts; Question 8: 3 pts)

Question 1: Mean and median (2 points)

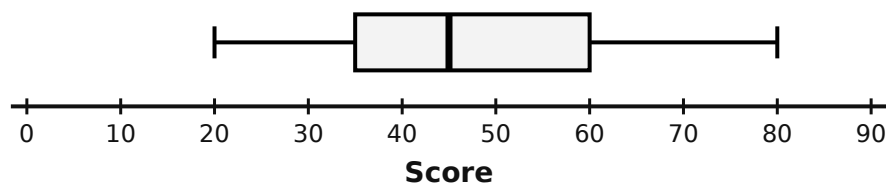
Find the mean and the median of 14, 8, 11, 21, 9, 13, 17, 10, 23. (1 point each)

Question 2: Five-number summary (3 points)

Find the five-number summary of 31, 24, 28, 35, 22, 27, 40, 30, 26, 33 (2 points) and the IQR (1 point).

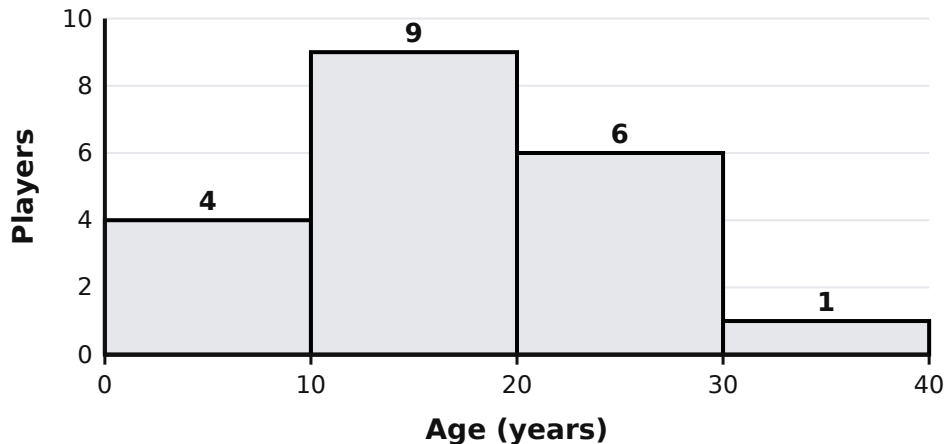
Question 3: Read a box plot (2 points)

The box plot shows quiz scores. (a) Find the median and the IQR. (1 point) (b) Twenty-five percent of the scores are above which value? (1 point)



Question 4: Read a histogram (2 points)

The histogram shows the ages of 20 players. (a) How many players are 20 or older? (1 point)
(b) In which interval is the median? (1 point)



Ages of 20 players in a youth league.

Question 5: Standard deviation (3 points)

Find the standard deviation of 3, 5, 6, 7, 9, treating the data as the whole group. Show the mean (1 point), the sum of the squared differences (1 point) and the standard deviation to the nearest tenth (1 point).

Question 6: Interpret standard deviation (2 points)

Two machines fill bags of rice. Machine A fills bags with a mean of 16.0 ounces and a standard deviation of 0.1 ounce. Machine B has a mean of 16.0 ounces and a standard deviation of 0.4 ounce. (a) Which machine is more consistent? (1 point) (b) Explain in the context of the bags. (1 point)

Question 7: Effect of an outlier (3 points)

The data set is 15, 16, 18, 18, 20, 21. (a) Find the mean and median. (1 point) (b) The value 60 is added. Find the new mean and median. (1 point) (c) Which measure changed more, and why? (1 point)

Question 8: Compare two distributions (3 points)

The box plots show the points two teams scored per game. (a) Compare the centers. (1 point) (b) Find and compare the IQRs. (1 point) (c) Which team's scoring is more consistent? Explain.

(1 point)

