

Asking Statistical Questions and Showing Data

Grade 6 math · Test Answer Key · Standards: 6.SP.A.1, 6.SP.A.2, 6.SP.B.4, 6.SP.B.5a, 6.SP.B.5b

Award the points in each scoring line. Accept any statistical question that expects varied answers. Give credit for a display that is scaled, labeled and matches the data, even when the dots are drawn differently.

Standards: 6.SP.A.1, 6.SP.A.2, 6.SP.B.4, 6.SP.B.5a, 6.SP.B.5b · **Level:** Grade 6

Question 1 Statistical or not (2 points)

- a. Statistical: the answers vary by student.
- b. Not statistical: the room has one enrollment number.

(a) statistical; (b) not statistical

Scoring: 1 point for each correct decision.

Question 2 Reading a dot plot (3 points)

- a. $1 + 1 + 2 + 3 + 4 + 2 + 1 + 1 = 15$ students.
- b. Values above 4: 5, 5, 6 and 9, so 4 students.
- c. The value 9 is far from the others, with a gap after 6.

(a) 15; (b) 4; (c) 9 books is unusually high

Scoring: 1 point for each part.

Question 3 Reading a histogram (3 points)

- a. $3 + 10 + 8 + 3 = 24$ students.
- b. The tallest bar is 10–19 minutes.
- c. $8 + 3 = 11$ students.

(a) 24; (b) 10–19 minutes; (c) 11 students

Scoring: 1 point for each part.

Question 4 Reading a box plot (3 points)

- a. The line in the box is at 55.
- b. $72 - 41 = 31$.
- c. The box runs from 48 to 63.

(a) 55°F; (b) 31°F; (c) 48°F and 63°F

Scoring: 1 point for each part.

Question 5 Describe a data set (2 points)

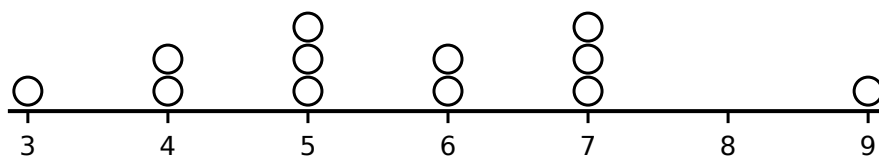
- a. There are 10 lengths. The attribute is the length of a fish, and the unit is inches.
- b. The least is 8 and the greatest is 18.

(a) 10 observations; length of a fish in inches; (b) 8 inches and 18 inches

Scoring: 1 point for each part.

Question 6 Draw a dot plot (3 points)

Draw a number line from 3 to 9, then stack dots: 3 once, 4 twice, 5 three times, 6 twice, 7 three times and 9 once.



Value

Dot plot for Question 6.

12 dots with a peak at 5 and at 7

Scoring: 1 point for a scaled and labeled number line; 2 points for all dots correct (1 point if one or two dots are wrong).

Question 7 Choose a display (2 points)

- a. A **histogram**.
- b. Sixty times are too many for single dots, and a histogram groups them into equal 5-second intervals.

Scoring: 1 point for each part.

Question 8 Write a question (2 points)

A sample answer: "How many hours do sixth graders at our school sleep on school nights?" It is statistical because the answers vary from student to student.

Any question that expects varied answers from many sixth graders

Scoring: 1 point for a question that expects variability, 1 point for the explanation.