MATHEMATICS · GRADES 7-9

Mean, Median, Mode, and Range

Difficulty level: Intermediate

Mathematics: Grades 7-9

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Overview of the concept

This is how you sum up a whole set of numbers in a few values, like a typical test score, the middle mark, the most common answer, and how far the scores spread. Four small numbers can describe a whole class of results, which is why every report, survey, and sports summary leans on them. You use them to read a survey, compare two classes, or check whether a set of prices, scores, or measurements is bunched together or spread far apart.



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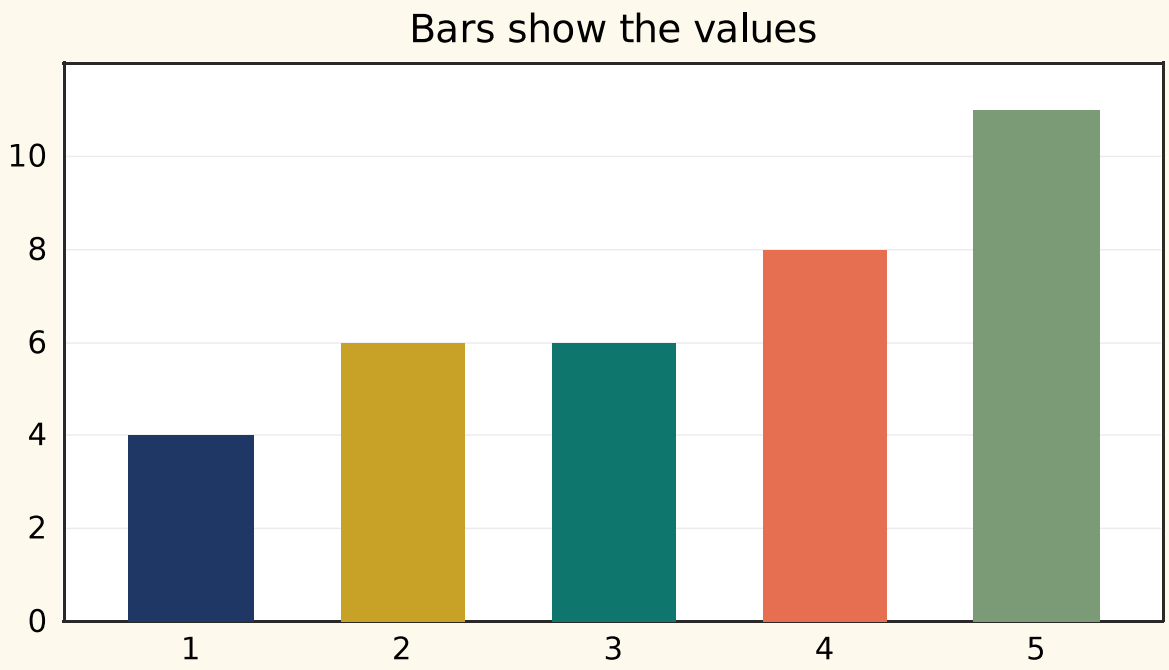
Worked examples

EXAMPLE 1

Q Find the mean, median, mode, and range of 4, 6, 6, 8, 11



SOLUTION

Mean: add 4 + 6 + 6 + 8 + 11 = 35, then divide by 5: $\frac{35}{5} = 7$

Median: the numbers are already in order, so the middle value is 6.

Mode: 6 appears most often.

Range: 11 - 4 = 7. Mean 7, median 6, mode 6, range 7

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EXAMPLE 2

Q Find the median of 3, 9, 5, 7

SOLUTION

Order the numbers: 3, 5, 7, 9.

There are two middle values, 5 and 7, so average them: $\frac{(5 + 7)}{2} = 6$

The median is 6.

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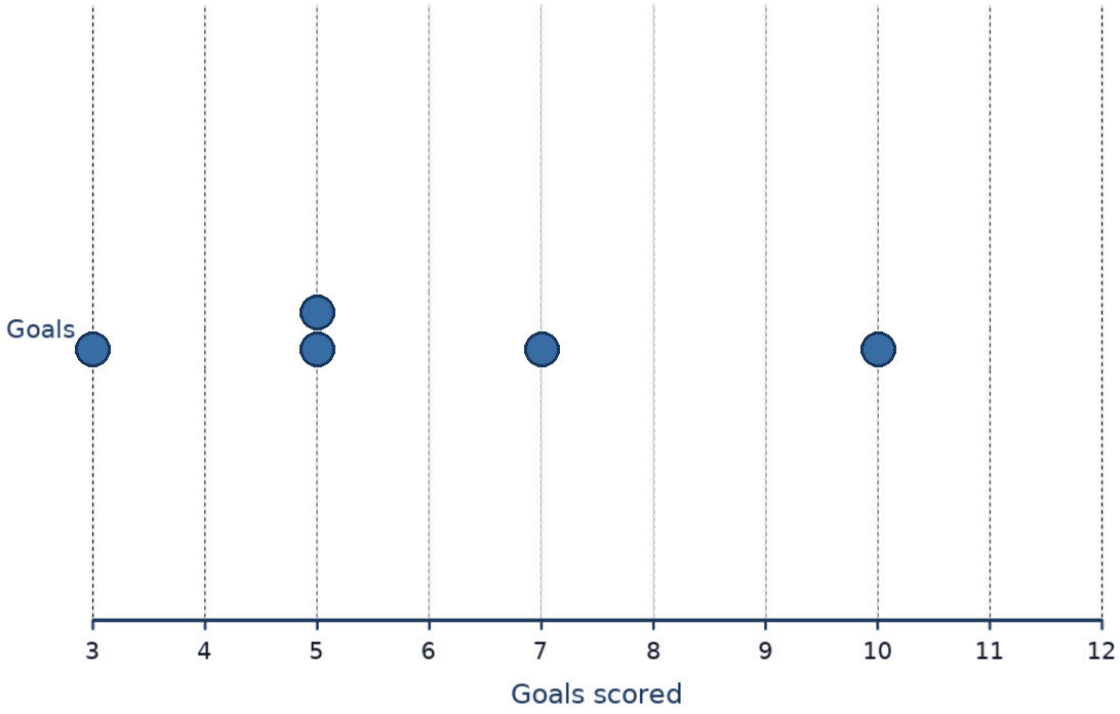
Practice questions

1 A soccer team counted the goals it scored in five games. The dot plot shows the counts. Find the mean, median, mode, and range.



- **A** Mean 6, median 5, mode 5, range 7
- **B** Mean 6, median 5, mode 7, range 7
- **C** Mean 5, median 5, mode 5, range 7
- **D** Mean 6, median 7, mode 5, range 7

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2 Use the diagram. Four test scores are in order, with the middle two marked. Find the median.



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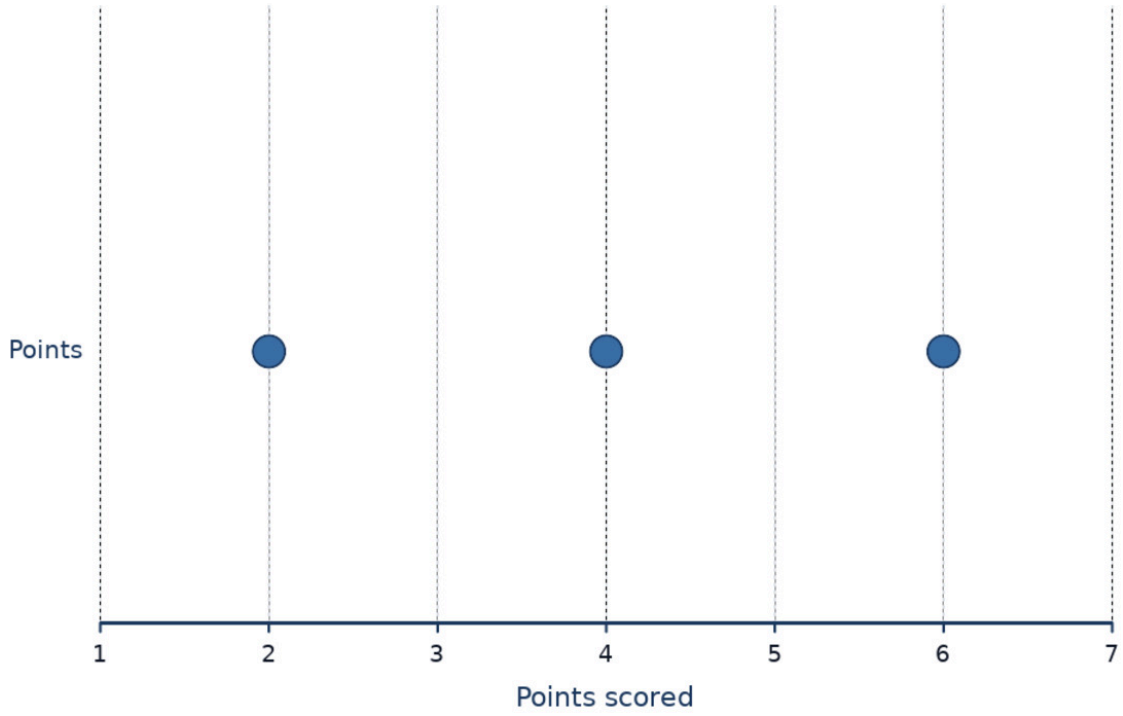
3 Three rounds of a game gave these point totals, shown in the dot plot. What is the total of the three point totals?



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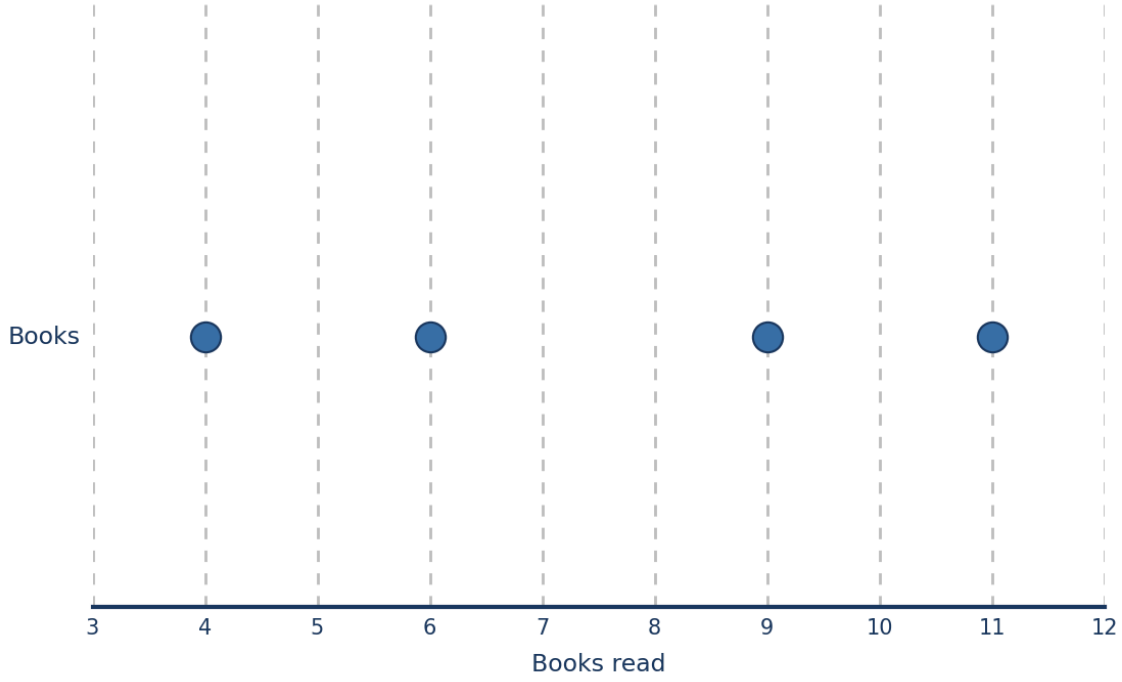
4 Use the diagram. The books read in four weeks are in order. Find the mean.



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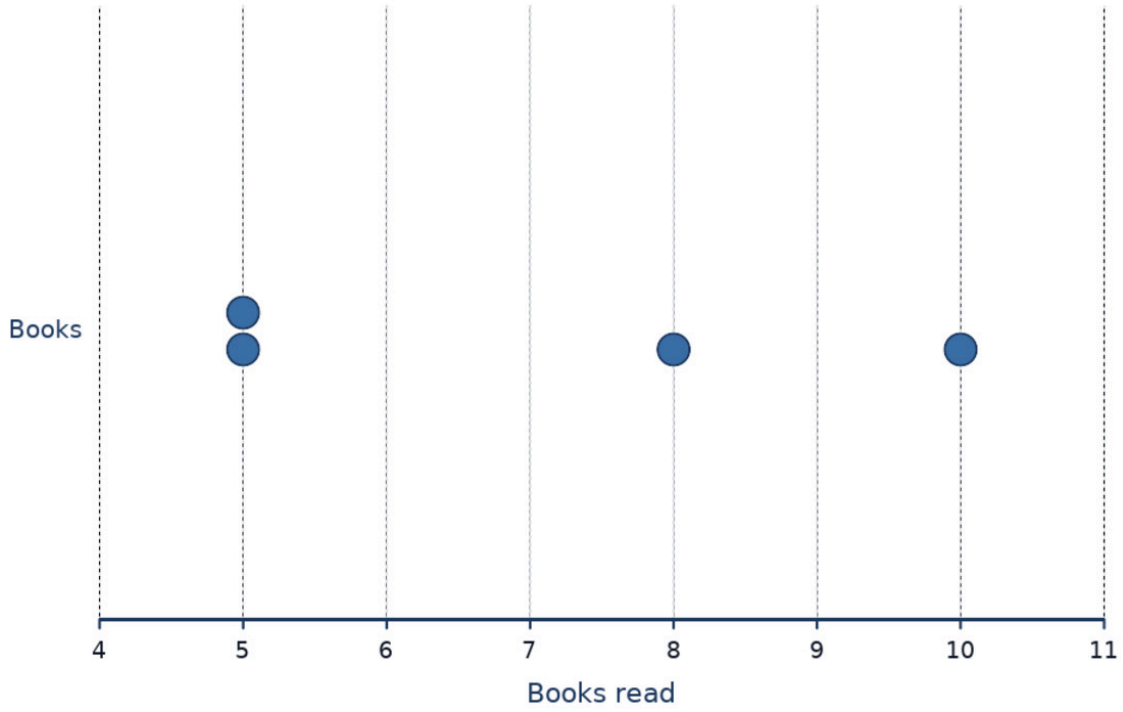
5 **A student counted the books read in four weeks. The dot plot shows the counts. What is the mode?**



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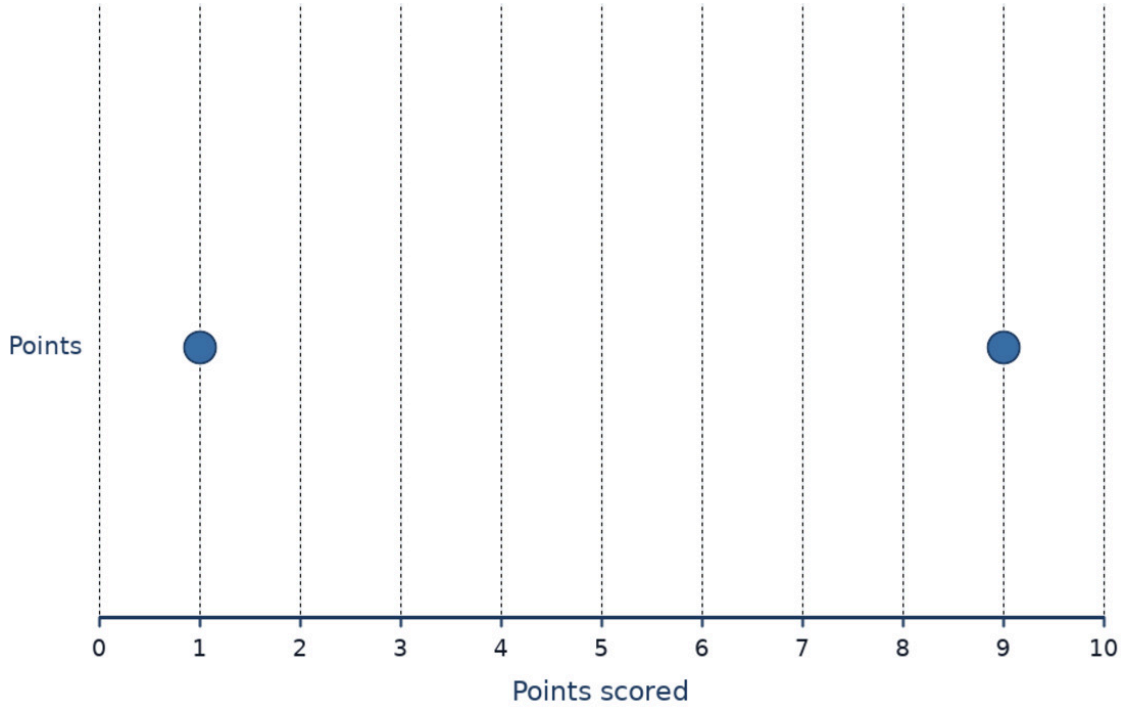
6 **Use the diagram. The points scored in two rounds are shown. Find the range.**



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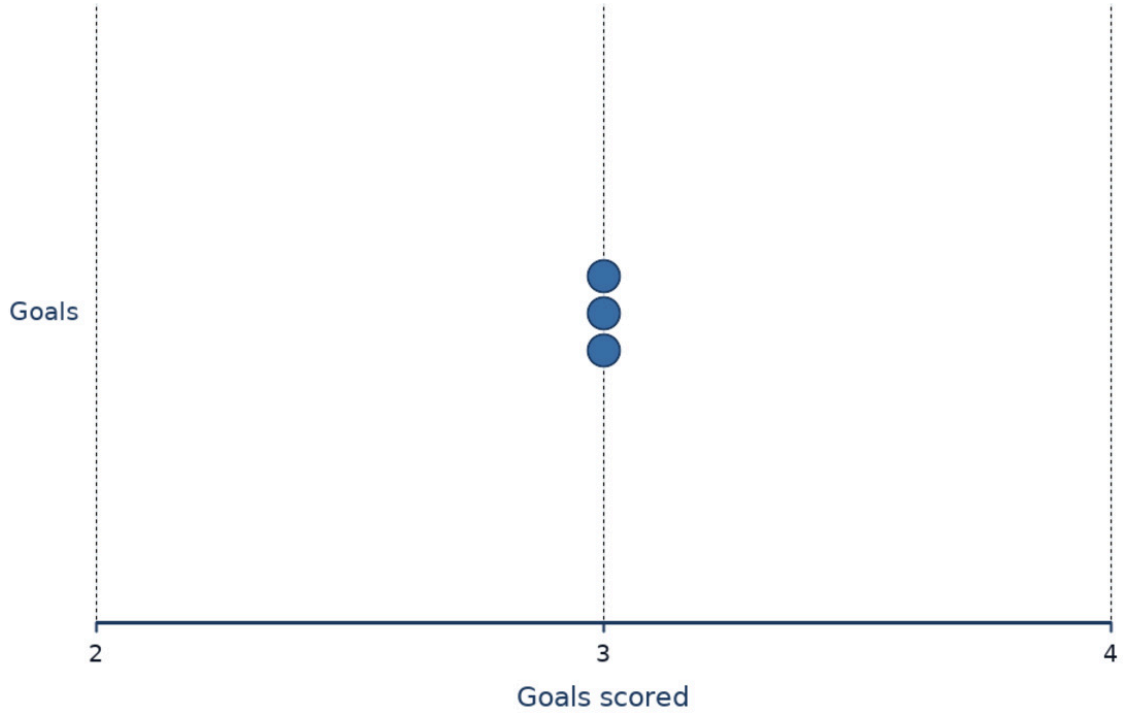
7 A team scored the same number of goals in three games, as shown in the dot plot. How many games did the team play?



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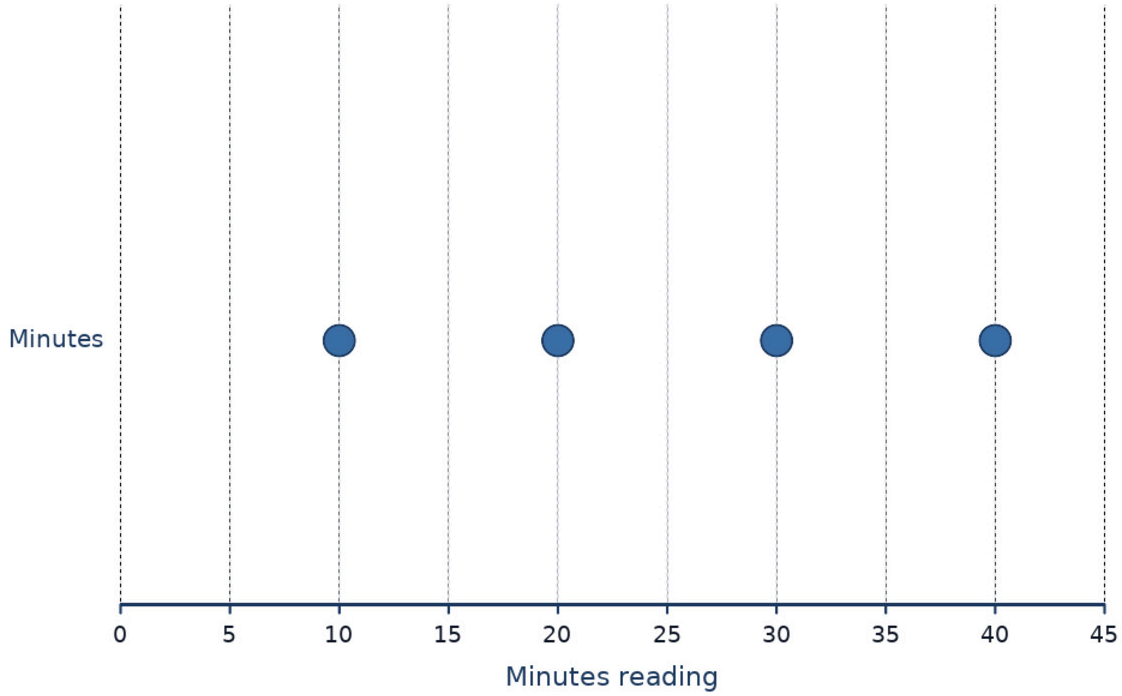
8 **A student timed reading on four days. The dot plot shows the minutes. Is the mean greater than, less than, or equal to the median?**



- **A** Equal
- **B** Greater
- **C** Less
- **D** Cannot tell

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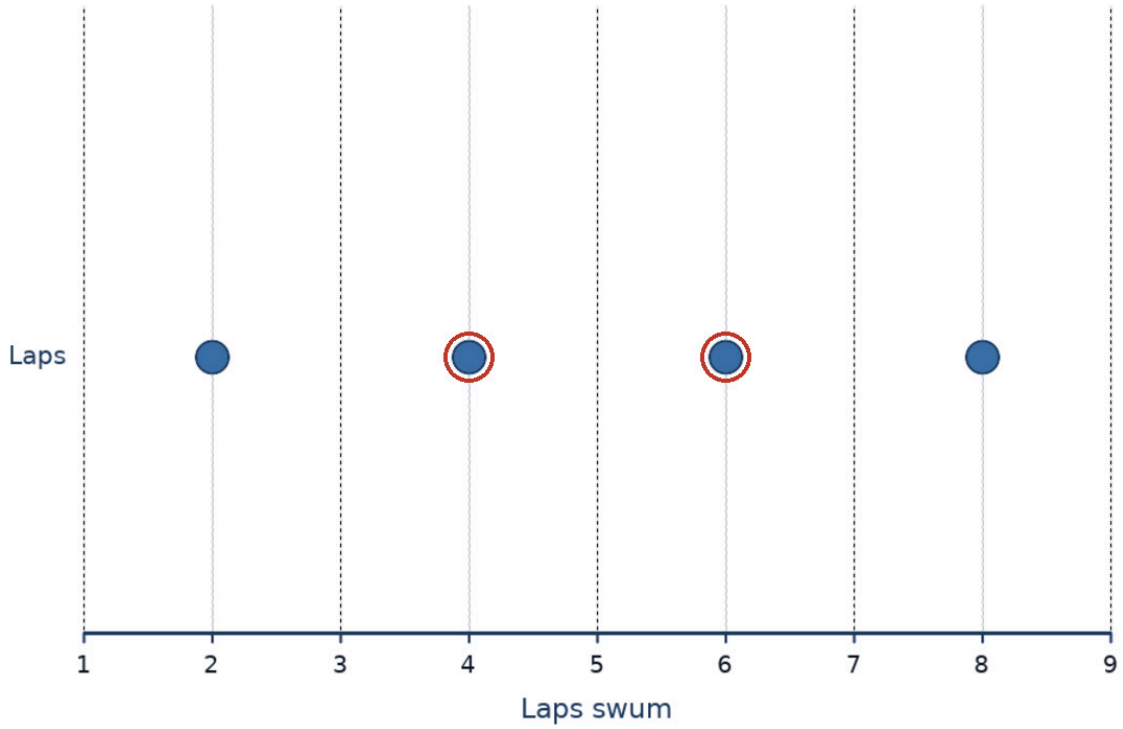
9 Use the diagram. The laps swum on four days are in order. Is there a mode?



A No mode

B 4

C 6

D 2

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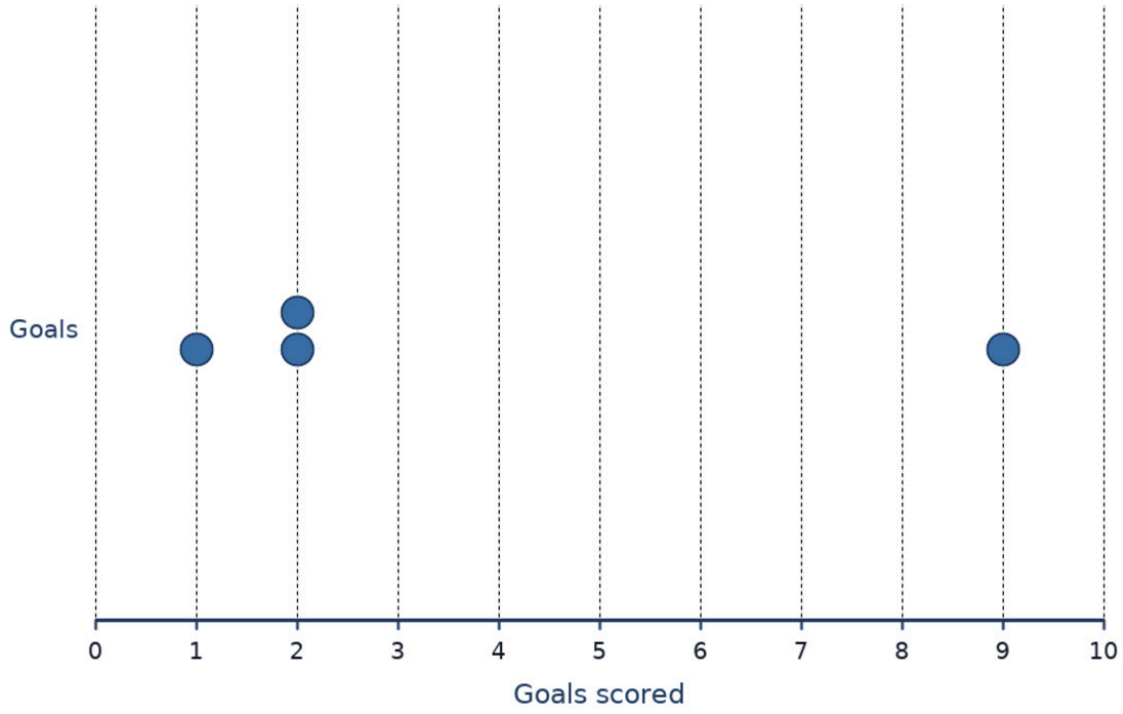
10 A team counted the goals it scored in four games. The dot plot shows the counts. One more game is played and the team scores 2 goals. What is the new mean?



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ANSWER KEY

1. Mean 6, median 5, mode 5, range 7

2. 6

3. 12

4. 7.5

5. 5

6. 8

7. 3

8. Equal

9. No mode

10. 3.2

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