

Mean Median Mode Range

KS3 Maths · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Find mean, median, mode, and range of: 3, 7, 3, 9, 5, 3, 8

Step 1 · Mean: sum ÷ count

$$(3+7+3+9+5+3+8) \div 7 = 38 \div 7 = 5.43$$

Step 2 · Median: order then find middle

3,3,3,5,7,8,9 → middle value = 5

Step 3 · Mode: most frequent

3 (appears 3 times)

Step 4 · Range: highest – lowest

$$9 - 3 = 6$$

Answer: Mean=5.43, Median=5, Mode=3, Range=6

Check: All four measures calculated independently from the same data set ✓

2. Now try one with the steps

Find the median of: 8, 3, 10, 6, 1, 7

Step 1 · Order the values

Step 2 · There are 6 values, so two share the middle

Step 3 · Find the number halfway between them

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. Find the mean of: 4, 7, 9, 10, 5 [2]

2. Find the median of: 3, 8, 1, 9, 4 [2]

3. Find the mode of: 2, 5, 5, 7, 8, 5, 2 [1]

4. Find the range of: 12, 45, 3, 28, 19 [2]
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5. Find the median of: 6, 2, 9, 4, 7, 1 (an even number of values) [3]
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6. A data set has 5 values with mean 8. A sixth value of 20 is added. Find the new mean. [3]
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7. Find the mean of: 12, 15, 18 [1]
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8. Find the median of: 2, 9, 4, 7, 5, 3, 8 [1]
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9. Find the mode of these shoe sizes: 5, 6, 6, 7, 4, 6, 5 [1]
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10. Find the range of these temperatures: -3°C , 5°C , 2°C , -6°C , 4°C [1]
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11. Find the mean of: 2.5, 3.1, 4.6, 3.8 [2]
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12. Find the median of: 11, 15, 13, 18, 12, 20 [2]
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13. Five numbers have a mean of 6. Four of them are 3, 5, 7 and 8. Find the fifth number. [2]
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14. Five salaries are £18,000, £20,000, £21,000, £22,000 and £150,000. Which average best represents a typical salary, and what is it? [2]

15. The mean of four numbers is 10. One number is removed and the mean of the other three is 9. Which number was removed? [3]

16. Write down five whole numbers with a mode of 4, a median of 5 and a mean of 6. [3]

4. Before you hand it in

Forgetting to order the data before finding the median

ALWAYS arrange data from smallest to largest first. Finding the 'middle' of unordered data gives a meaningless answer.

Saying a data set has no mode when actually it has two values tied for most frequent (bimodal)

If two values are tied for the highest frequency, the data set is 'bimodal' and BOTH values are modes. Only say 'no mode' if every value appears exactly once.

Giving the range as 'from 3 to 45'

The range is a single number: highest – lowest. For values from 3 to 45, the range is $45 - 3 = 42$.