

KS3 – Averages

Section A – Mean

Q1 (4 marks)

Find the mean of each set of numbers.

a) 4, 6, 8

b) 5, 7, 9, 11

c) 12, 15, 18, 19

d) 3, 5, 7, 9, 11

Q2 (4 marks)

Find the mean of each set.

a) 14, 18, 12, 16, 20

b) 7, 13, 9, 15, 11

c) 2.5, 4.5, 3, 6

d) 1.2, 2.8, 3.6, 4.4

Q3 (3 marks)

Solve each problem.

- a) Mia scores 12, 16, 14 and 18 points in four games. Find her mean score.
- b) The temperatures over five days are 9°C , 11°C , 13°C , 10°C and 12°C . Find the mean temperature.
- c) Five books have page counts 120, 150, 180, 130 and 170. Find the mean number of pages.

Q4 (3 marks)

Find the missing value.

- a) The mean of 6, 8 and x is 7.
- b) The mean of 10, 12, 14 and x is 13.
- c) The mean of five numbers is 9. Four of the numbers are 5, 7, 10 and 11. Find the fifth number.

Challenge

Q5 (3 marks)

The mean of six numbers is 14. Five of the numbers are 9, 12, 15, 17 and 18.
Find the sixth number.

Section B – Median

Q6 (4 marks)

Find the median of each set.

a) 3, 7, 9, 11, 15

b) 12, 4, 9, 6, 10

c) 2, 5, 7, 8, 11, 14

d) 18, 7, 12, 4, 15, 9

Q7 (3 marks)

Find the median.

a) 1.5, 2.8, 3.1, 4.6, 5.2

b) 8, 3, 11, 5, 6, 14, 9

c) 20, 12, 16, 10, 18, 14

Q8 (3 marks)

Solve each problem.

a) Seven students read 3, 7, 5, 8, 4, 6 and 9 books. Find the median.

b) The journey times, in minutes, are 18, 25, 20, 16, 22 and 19. Find the median.

c) Nine test scores are 11, 15, 18, 12, 20, 16, 14, 19 and 13. Find the median.

Q9 (3 marks)

Answer each question.

a) The ordered values are 4, 7, 9, x , 15. The median is 11. Find x .

b) The ordered values are 3, 6, x , 12, 17. The median is 9. Find x .

c) The ordered values are 5, 8, 10, x , 14, 18. The median is 11. Find x .

Section C – Mode

Q10 (4 marks)

Find the mode of each set.

a) 2, 3, 3, 5, 7

b) 8, 6, 8, 4, 8, 9

c) 12, 14, 15, 14, 16, 14, 18

d) 5, 7, 5, 8, 7, 9, 5

Q11 (3 marks)

State the mode, or state that there is no mode.

a) 4, 6, 8, 10

b) 2, 2, 5, 5, 7

c) 3, 4, 4, 4, 6, 6

Q12 (3 marks)

Solve each problem.

a) Shoe sizes sold in one hour were 6, 7, 8, 7, 9, 7, 8. Find the mode.

b) A survey records favourite pet choices: cat, dog, dog, fish, cat, dog, rabbit. Find the mode.

c) Goals scored by a team over eight games were 1, 2, 0, 2, 3, 2, 1, 2. Find the mode.

Section D – Range

Q13 (4 marks)

Find the range of each set.

- a) 4, 9, 12, 15
- b) 18, 7, 21, 13, 10
- c) 2.5, 7.8, 4.1, 6.3
- d) -3, 4, 8, -1, 6

Q14 (3 marks)

Solve each problem.

- a) The temperatures during a week range from 6°C to 17°C . Find the range.
- b) A player's scores are 14, 22, 18, 31 and 16. Find the range.
- c) The shortest plant is 12 cm tall and the tallest is 29 cm tall. Find the range.

Q15 (3 marks)

Find the missing value.

- a) The numbers are 5, 8, 11 and x . The range is 10 and x is the largest value. Find x .
- b) The numbers are x , 7, 12 and 15. The range is 11 and x is the smallest value. Find x .
- c) The numbers are 9, 13, 18, 20 and x . The range is 16 and x is the smallest value. Find x .

Section E – Choosing & Comparing Averages

Q16 (4 marks)

For each set, find the mean, median, mode and range.

a) 4, 6, 6, 8, 11

b) 3, 5, 7, 7, 8, 12

Q17 (4 marks)

Choose the most useful average and explain briefly.

a) A shoe shop wants to know which shoe size it should keep the most stock of.

b) A teacher wants a typical test score, but one student has an unusually low score compared with everyone else.

c) A café wants to know the average amount customers spend, and there are no unusually high or low values.

d) A student wants to describe how spread out a set of results is. Which measure should they use?

Q18 (4 marks)

Compare the two groups.

Group A scores: 5, 6, 6, 7, 8

Group B scores: 3, 6, 6, 7, 10

Find the mean and range for each group. Which group is more consistent?

Challenge

Q19 (4 marks)

Five numbers have a mean of 12, a median of 11 and a mode of 10. Four of the numbers are 10, 10, 11 and 14.

Find the fifth number and check that all three given averages are correct.

Total: ____ / 66

Percentage: ____%