

QUARTILES

- 1) A list of 11 numbers is shown below.

3 5 7 8 10 12 12 15 16 18 19

- Work out the median.
- Work out the lower quartile.
- Work out the upper quartile.
- Work out the interquartile range.

- 2) A list of 7 numbers is shown below.

4 6 8 11 13 16 17

- Work out the median.
- Work out the lower quartile.
- Work out the upper quartile.
- Work out the interquartile range.

- 3) The test scores from a group of students are as shown:

22 25 27 30 32 35 38 40 41 44 45

- Work out the lower quartile of the scores.
- Work out the upper quartile of the scores.
- Work out the interquartile range.

- 4) A teacher records the number of books read by 9 pupils:

2 3 4 4 5 6 7 9 12

- Work out the lower quartile.
- Work out the upper quartile.
- Work out the interquartile range.

- 5) The heights in cm of some house plants are:

45 47 50 52 53 55 56 58 60 61 63

- Work out the median height.
- Work out the lower quartile.
- Work out the upper quartile.
- What does the IQR suggest about the plants?

- 6) The number of hours a group of university students spent revising last week are as follows:

34 10 22 18 11 26 24 30 14

- Work out the median time spent.
- Work out the lower quartile.
- Work out the upper quartile.
- Work out the interquartile range.

7) The data for the number of goals a footballer scored in 11 matches are as follows:

$$\text{Median} = 2$$

$$\text{Upper Quartile} = 5$$

$$\text{IQR} = 4$$

Work out the lower quartile of goals scored.

8) Two classes sit the same quiz in geography.

Class A's scores:

12, 13, 14, 15, 15, 17, 18, 20, 21, 23, 25

Class B's scores:

10, 11, 12, 14, 14, 16, 19, 20, 22, 26, 28

- Work out the IQR for Class A.
- Work out the IQR for Class B.
- Which class has more consistent scores? Explain your answer.

9) Two groups are asked about their daily allowance for lunch, in pounds.

Group X's responses:

5 6 6 7 8 9 10 10 11 12 14

Group Y's responses:

3 4 5 7 8 9 10 11 12 15 20

Make two comparisons about the data for each group.

10) Two runners were asked how many kilometres they ran, per day last week. Their data is summarised in the table below.

Runner	Median	Interquartile Range
A	5	3
B	6.5	2

Make two comparisons about the data for each runner.

11) An ordered list of 9 numbers is shown.

2 x 6 8 9 10 14 18 19

- Write an expression for the lower quartile.
- Given that the lower quartile is 7, work out the value of x .

12) An ordered list of 7 numbers is shown.

1 $2x$ 5 7 9 11 12

Given that the mean of the numbers is 7, work out the interquartile range.

13) An ordered list of 7 numbers is shown.

2 $x - 16$ 6 10 18 $2x - 20$ 26

Given that the interquartile range is 18, work out the lower quartile and upper quartile.

Challenge

14) A list of ordered numbers is as follows

2 $\frac{1}{2}(x + y)$ 6 10 14 $3x + y$ 26

Given that the lower quartile is 5 and the upper quartile is 16, work out the values of x and y .
You must show all your working. Do not use trial and error.