JP Maths Revision

Attempt the paper before watching the solutions!

https://www.youtube.com/@JPMathsRevision

HIGHER TIER

Quartiles and Interquartile Range

INSTRUCTIONS

- Use **black ink** or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

INFORMATION

- The marks for **each** question are shown in brackets– *use this as a guide as to how much time to spend on each question.*

ADVICE

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

You've got this!

1. Here is a list of numbers

3, 5, 6, 8, 9, 11, 14, 18, 20, 22, 24

(a) Find the lower quartile

$\frac{11+1}{4} = 3rd$

6

(1)

(b) Find the median

$\frac{11+1}{2}$ nd $= 6th$

11

(1)

(c) Find the upper quartile

$\frac{3(11+1)}{4} = 9th$

20

(1)

(d) Find the interquartile range

$20 - 6 = 14$

14

(1)

(Total for Question 1 is 4 marks)

2. Here is a list of numbers

2, 4, 5, 7, 8, 10, 12, 13, 15

(a) Find the lower quartile

$\frac{9+1}{4} = \frac{10}{4} = 2.5$th

4.5

(1)

(b) Find the median

$\frac{9+1}{2}$ nd $= 5$th

8

(1)

(c) Find the upper quartile

$\frac{3(9+1)}{4} = 7.5$th

12.5

(1)

(d) Find the interquartile range

$12.5 - 4.5$

8

(1)

(Total for Question 2 is 4 marks)

3. Here is a list of numbers

1, 2, 4, 6, 7, 8, 9, 12, 15, 17, 19, 20

(a) Find the lower quartile

$\frac{12+1}{4}$ th = 3.25th

5

(1)

(b) Find the median

8.5

(1)

(c) Find the upper quartile

16

(1)

(d) Find the interquartile range

16 − 5

11

(1)

(Total for Question 3 is 4 marks)

4. The following data show the number of goals scored by a team:

8, 3, 5, 12, 7, 9, 4, 15, 6, 10, 11

3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15

(a) Find the lower quartile

$\frac{11+1}{4}$ th = 3rd

5

.....

(1)

(b) Find the median

$\frac{11+1}{2}$ nd = 6th

8

.....

(1)

(c) Find the upper quartile

$\frac{3(11+1)}{4}$ th = 9th

11

.....

(1)

(d) Find the interquartile range

11 − 5 = 6

6

.....

(1)

(Total for Question 4 is 4 marks)

5. Class A has an interquartile range of 12.

Class B has an interquartile range of 7.

Compare the distribution for the two classes.

You must explain your answer.

Class B had more Consistent Scores.

(Total for Question 5 is 1 mark)

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6. Two sets of data both have the same median.

One set has an interquartile range of 5 and the other has an interquartile range of 14.

What does this tell you about the data?

You must explain your answer.

Data for the first set is less spread out than the data for the second set.

(Total for Question 6 is 1 mark)

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7. The lower quartile for this set of data is 5.

3, 4, x, 7, 10, 12, 15, 18, 20

Find the value of x

$\frac{9+1}{4}$ th $= 2.5$th $= 5$

$x = 6$

6

.....

(Total for Question 3 is 2 marks)

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8. A data set contains 5 numbers.

The median is 14.

The lower quartile is 9.

The upper quartile is 20.

Write down one possible data set.

1 9 14 20 21

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(Total for Question 8 is 2 marks)
