Name:

Exam Style Questions

Medians and Quartiles from Grouped Data (Interpolation)

Corbettmaths

Equipment needed: Pen, Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 52

Answers and Video Solutions

1. 100 students sat a physics examination.
The time they spent revising is shown in the table.

Hours, h	Frequency
$0 < h \leq 5$	27
$5 < h \leq 10$	44
$10 < h \leq 15$	21
$15 < h \leq 20$	8

By using linear interpolation, find an estimate of the median time spent revising.

.....hours
(3)

2. 50 people work for a company.

The table shows information about their monthly salaries, in pounds (£).

Monthly Salary	Frequency
$1600 \leq s < 2400$	21
$2400 \leq s < 3200$	12
$3200 \leq s < 4000$	9
$4000 \leq s < 4800$	5
$4800 \leq s < 5600$	3

Find an estimate of the median monthly salary.

£.....

(3)

3. Alison measures the heights of her plants in her greenhouse.

Height (x cm)	Frequency
$0 < x \leq 10$	3
$10 < x \leq 20$	7
$20 < x \leq 30$	12
$30 < x \leq 40$	31
$40 < x \leq 50$	27

(a) Find an estimate of the median height.

.....cm
(3)

(b) Find an estimate of the lower quartile.

.....cm
(3)

(c) Find an estimate of the upper quartile.

.....cm
(3)

(d) Find an estimate of the interquartile range.

.....cm
(1)

4. The weights of some rugby players are recorded in the table below.

Weight (x kg)	Frequency
$60 < x \leq 64$	10
$64 < x \leq 68$	20
$68 < x \leq 72$	30
$72 < x \leq 76$	15
$76 < x \leq 80$	18
$80 < x \leq 84$	7

(a) Calculate an estimate of the mean weight.

.....kg
(3)

(b) Find an estimate of the median by using linear interpolation.

.....kg
(3)

(c) Calculate an estimate of the interquartile range.

.....kg
(4)

5. A scheme has been introduced to encourage **younger people** to buy houses.
In Sunderland, 1200 houses were bought in 2023 under the scheme.
The table below shows the ages of the home buyers.

Age (A years)	Frequency
$20 < A \leq 25$	145
$25 < A \leq 30$	200
$30 < A \leq 35$	94
$35 < A \leq 40$	141
$40 < A \leq 45$	294
$45 < A \leq 50$	326

A brochure is being created that will contain the average age of these home buyers.
The brochure writer would like this average to be as low as possible to show that young people are benefitting from the scheme.

Should the brochure contain the mean or the median?
Explain your answer.

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.....

(6)