

Histograms

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1

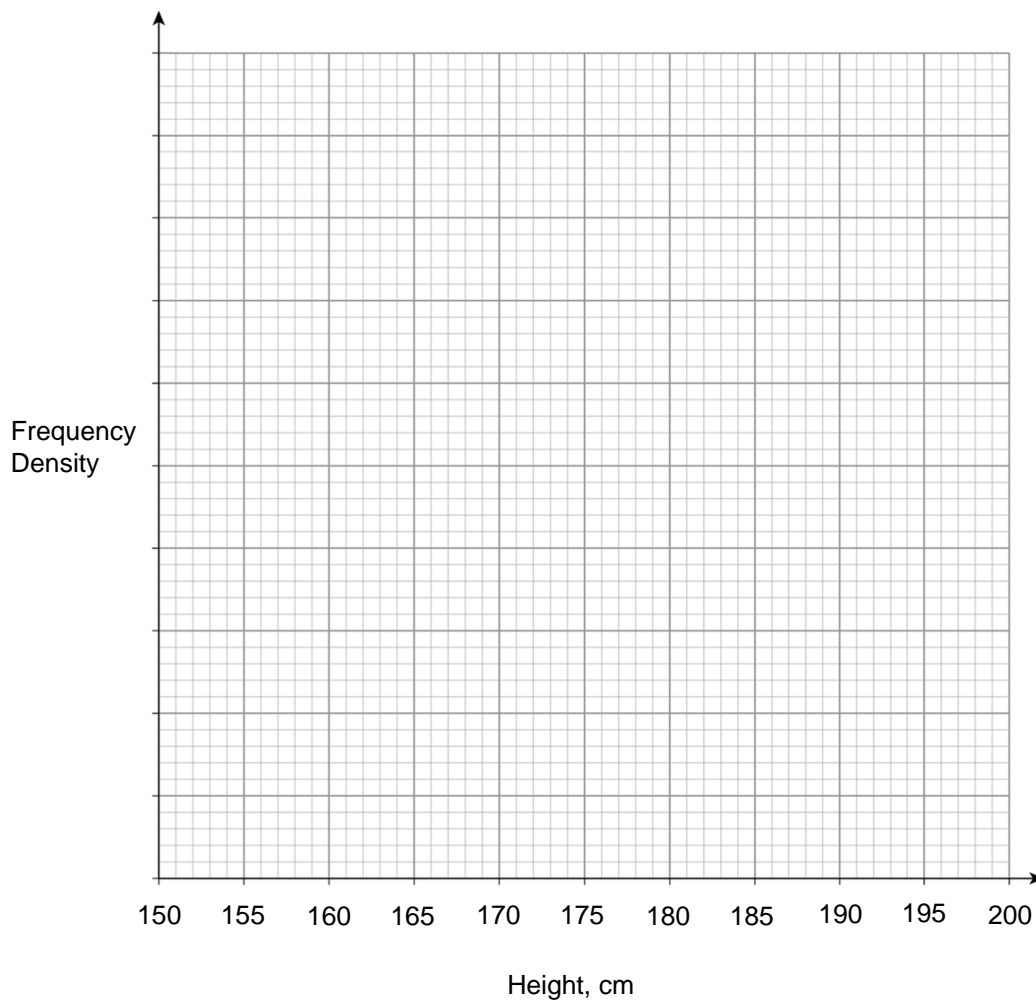
The table gives information about the heights of Year 12 pupils in college.

(Level 6)

Height (cm)	Frequency	FD
$150 < cm \leq 155$	10	
$155 < cm \leq 165$	25	
$165 < cm \leq 170$	12	
$170 < cm \leq 180$	33	
$180 < cm \leq 190$	22	
$190 < cm \leq 200$	5	

Draw a histogram for the information on the axes below.

[3 marks]



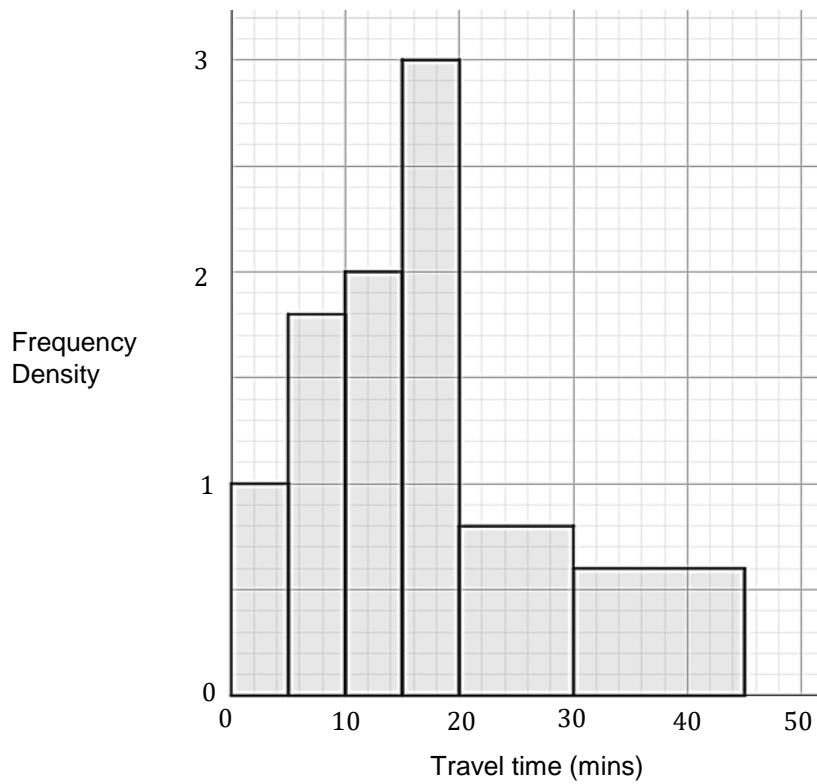
Turn over for next question

Turn over ►

2

Data on the travel times of students getting to school has been collected and is summarised in a histogram below.

(Level 6)



Use the histogram to fill in the information in the grouped frequency table below.

[3 marks]

Time, t , (mins)	Frequency
$0 < t \leq 5$	
$5 < t \leq 10$	
$10 < t \leq 15$	
$15 < t \leq 20$	
$20 < t \leq 30$	
$30 < t \leq 45$	

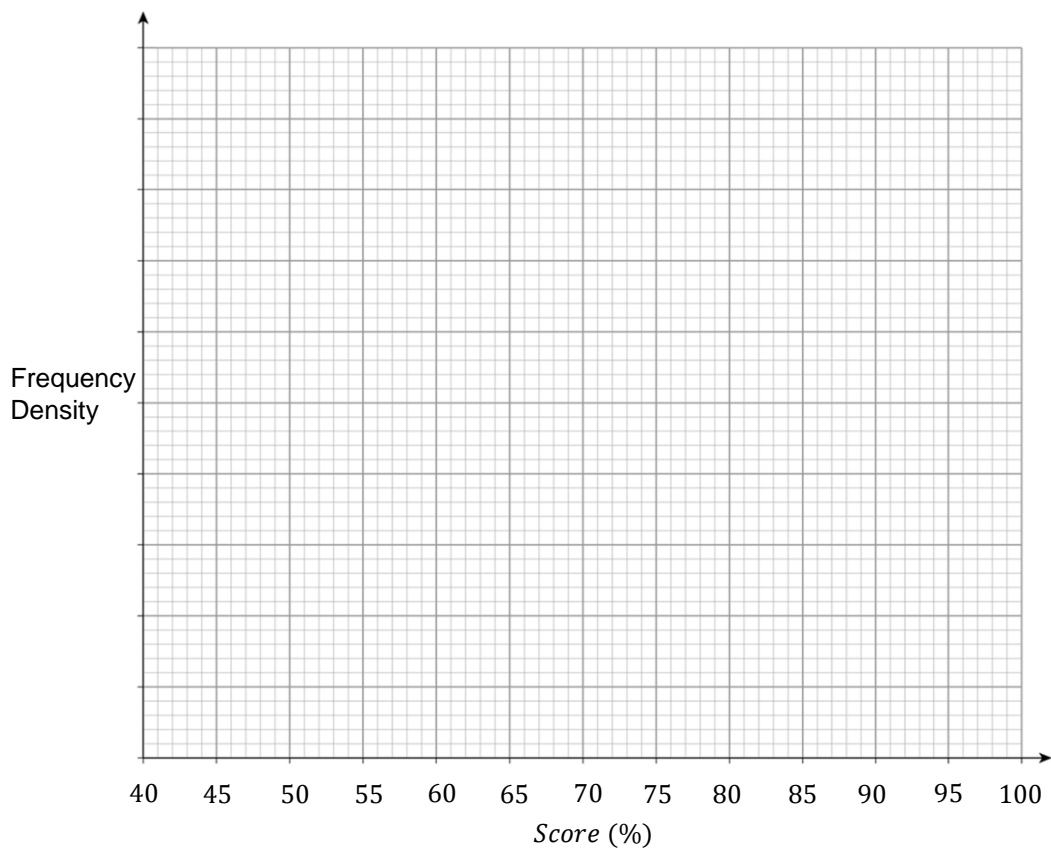
- 3** The table shows the results of a spelling test.

(Level 6)

Score (%)	Frequency	
$40 < m \leq 50$	3	
$50 < m \leq 60$	5	
$60 < m \leq 75$	12	
$75 < m \leq 80$	10	
$80 < m \leq 85$	4	
$85 < m \leq 100$	3	

- 3(a)** Draw a histogram for these results on the axes below.

[3 marks]



- 3(b)** Calculate an estimate for the median score using your histogram.

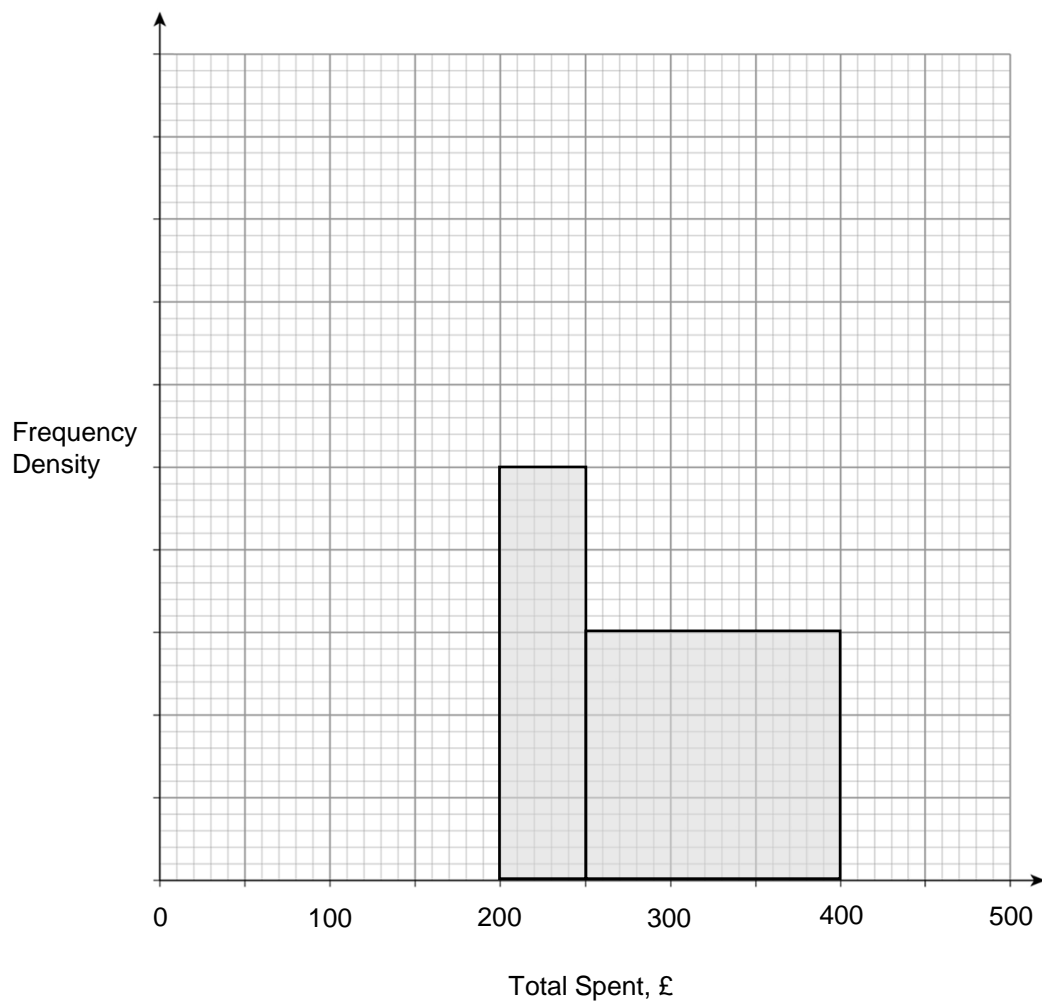
[2 marks]

Answer _____

- 4 The table and histogram show some data on the amount spent by shoppers during the Christmas period. Complete the table and histogram. (Level 7)

[3 marks]

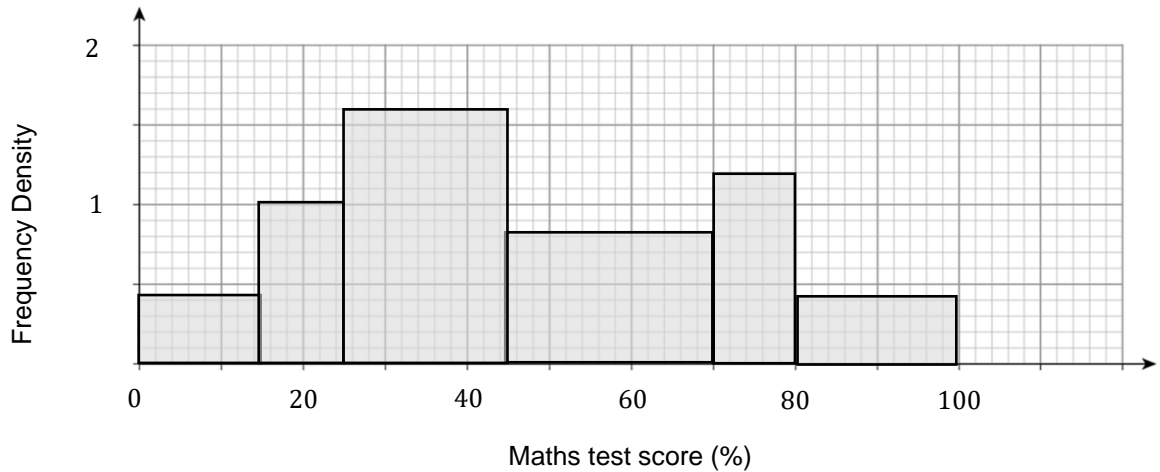
Total spent (£)	Frequency
$0 < £ \leq 100$	20
$100 < £ \leq 200$	60
$200 < £ \leq 250$	25
$250 < £ \leq 400$	
$400 < £ \leq 450$	35
$450 < £ \leq 500$	5



5

Use the histogram below to answer the following questions.

(Level 7)



5(a)

The score required for a grade C was 45%.

How many students achieved at least a grade C?

[2 marks]

Answer

5(b)

Which group was the modal class?

[2 marks]

Answer

Question continues on next page

5(c) The score required for a grade B was 75%.

Estimate the number of students that achieved a grade A or B assuming A is the highest grade.

[2 marks]

Answer _____

5(d) Why is this answer an estimate?

[1 mark]

Answer _____



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Turn over ►

6 The times taken for students to complete a challenge in PE are collected. (Level 8)

There are x students in the group $30 < t \leq 35$.

y students join the group and the frequency density increases by 15%.

6(a) Tom says, "there were fewer than 50 people in group x and y ".

Using this knowledge, find possible values for the number of students in x and y .

[4 marks]

Answer _____

6(b) Based on your answer, make an estimate for the number of students who achieved a time between $30 < t \leq 32$.

[2 marks]

Answer _____



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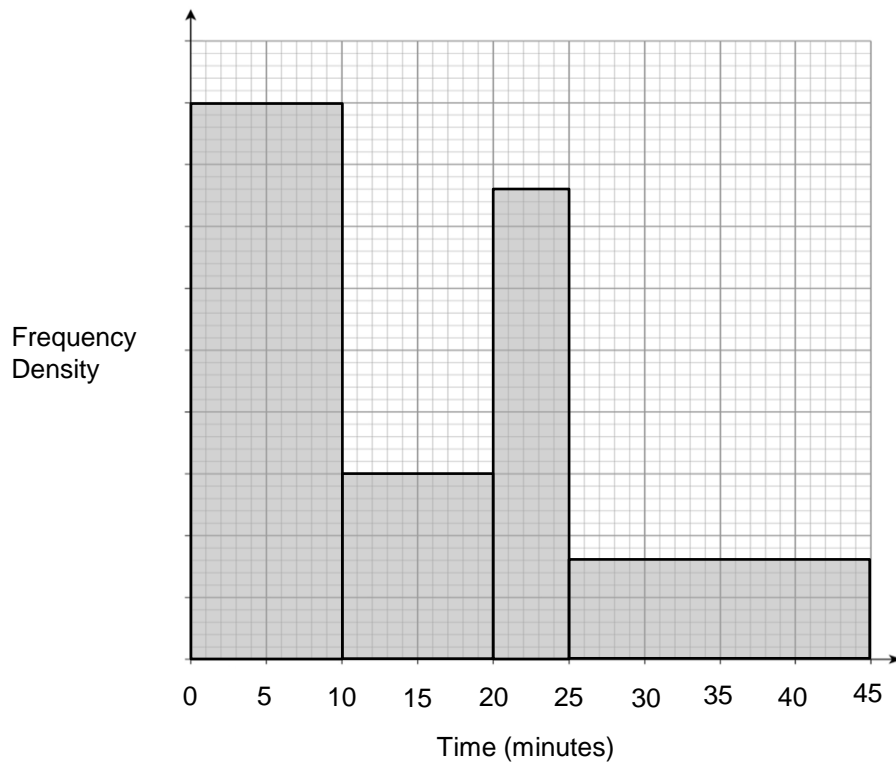
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7

The histogram shows information about the time it took 266 people to commute to work.

(Level 8)



Any employee whose commute took 15 minutes or less, are able to sign up for a cycle-to-work scheme.

Use the histogram to estimate the percentage of people that are eligible for the scheme.

Give your answer to 1 decimal places.

[3 marks]

Answer _____

End of Questions