Mock Grade 6

Maths Booklet 2

Paper 1H
Non-Calculator

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1 The table shows some information about the profit made each day at a cricket club on 100 days.

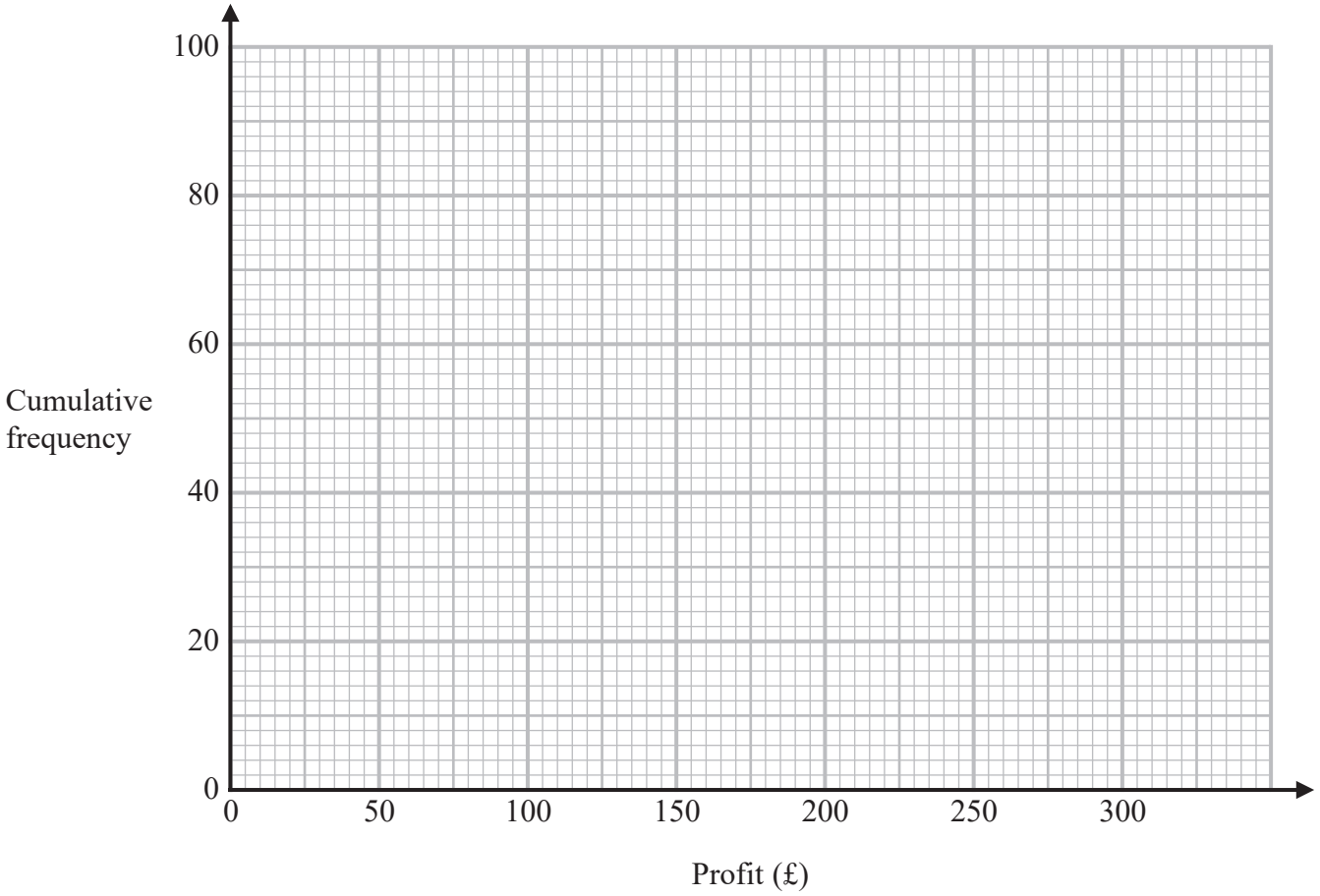
Profit (£x)	Frequency
$0 \leqslant x < 50$	11
$50 \leqslant x < 100$	19
$100 \leqslant x < 150$	15
$150 \leqslant x < 200$	35
$200 \leqslant x < 250$	5
$250 \leqslant x < 300$	15

(a) Complete the cumulative frequency table.

Profit (£x)	Cumulative frequency
$0 \leqslant x < 50$	
$0 \leqslant x < 100$	
$0 \leqslant x < 150$	
$0 \leqslant x < 200$	
$0 \leqslant x < 250$	
$0 \leqslant x < 300$	

(1)

(b) On the grid, draw a cumulative frequency graph for this information.



(2)

(c) Use your graph to find an estimate for the number of days on which the profit was less than £160

..... days

(1)

(d) Use your graph to find an estimate for the interquartile range.

£.....

(2)

(Total for Question 1 is 6 marks)

2 Cormac has some sweets in a bag.
The sweets are lime flavoured or strawberry flavoured or orange flavoured.

In the bag

$$\text{number of lime flavoured sweets} : \text{number of strawberry flavoured sweets} : \text{number of orange flavoured sweets} = 8 : 15 : x$$

Cormac is going to take at random a sweet from the bag.

The probability that he takes a lime flavoured sweet is $\frac{2}{9}$
Work out the value of x.

$x =$ .....

(Total for Question 2 is 3 marks)

3 Express $0.3\dot{3}\dot{2}$ as a fraction.
You must show all your working.

.....

(Total for Question 3 is 3 marks)

4 (a) Write down the value of $121^{\frac{1}{2}}$

.....

(1)

(b) Find the value of $27^{\frac{2}{3}}$

.....

(2)

(Total for Question 4 is 3 marks)

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5 3 teas and 2 coffees have a total cost of £9.95
4 teas and 1 coffee have a total cost of £10.35

Work out the cost of one tea and the cost of one coffee.

tea £.....

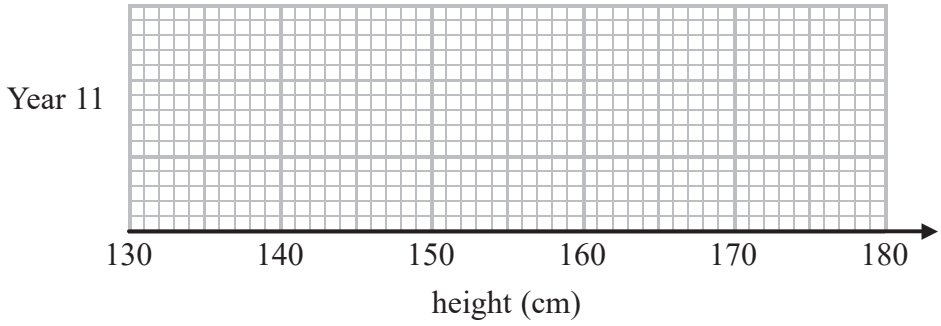
coffee £.....

(Total for Question 5 is 4 marks)

6 The table shows information about the heights, in cm, of a group of Year 11 girls.

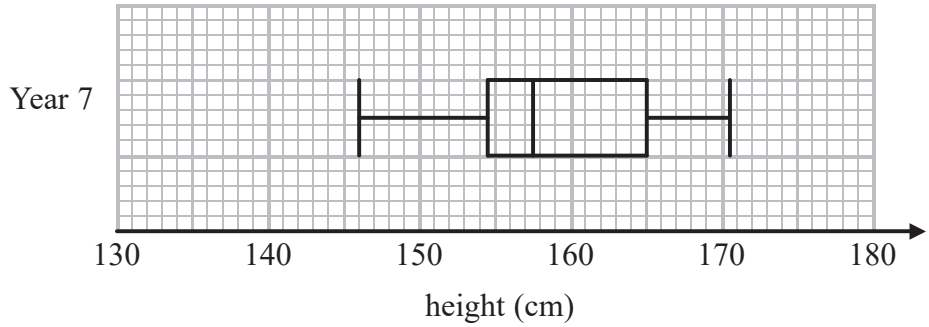
	height (cm)
least height	144
median	163
lower quartile	160
interquartile range	8
range	32

(a) Draw a box plot for this information.



(3)

The box plot below shows information about the heights, in cm, of a group of Year 7 girls.



(b) Compare the distribution of heights of the Year 7 girls with the distribution of heights of the Year 11 girls.

.....

.....

.....

.....

(2)

(Total for Question 6 is 5 marks)

7 Given that $\frac{a}{b} = \frac{4}{9}$ and $\frac{b}{c} = \frac{2}{5}$

find $a : b : c$

.....

(Total for Question 7 is 3 marks)

8 (a) Find the value of $\sqrt[4]{16 \times 10^{12}}$

.....

(2)

(b) Find the value of $25^{-\frac{1}{2}}$

.....

(2)

(c) Write $\frac{2^n}{8^{n-1}}$ as a power of 2

.....

(2)

(Total for Question 8 is 6 marks)

9 The table gives information about the weekly wages of 80 people.

Wage (£w)	Frequency
$200 < w \leqslant 250$	5
$250 < w \leqslant 300$	12
$300 < w \leqslant 350$	20
$350 < w \leqslant 400$	18
$400 < w \leqslant 450$	15
$450 < w \leqslant 500$	10

(a) Complete the cumulative frequency table.

Wage (£w)	Cumulative frequency
$200 < w \leqslant 250$	
$200 < w \leqslant 300$	
$200 < w \leqslant 350$	
$200 < w \leqslant 400$	
$200 < w \leqslant 450$	
$200 < w \leqslant 500$	

(1)

(b) On the grid opposite, draw a cumulative frequency graph for your completed table.

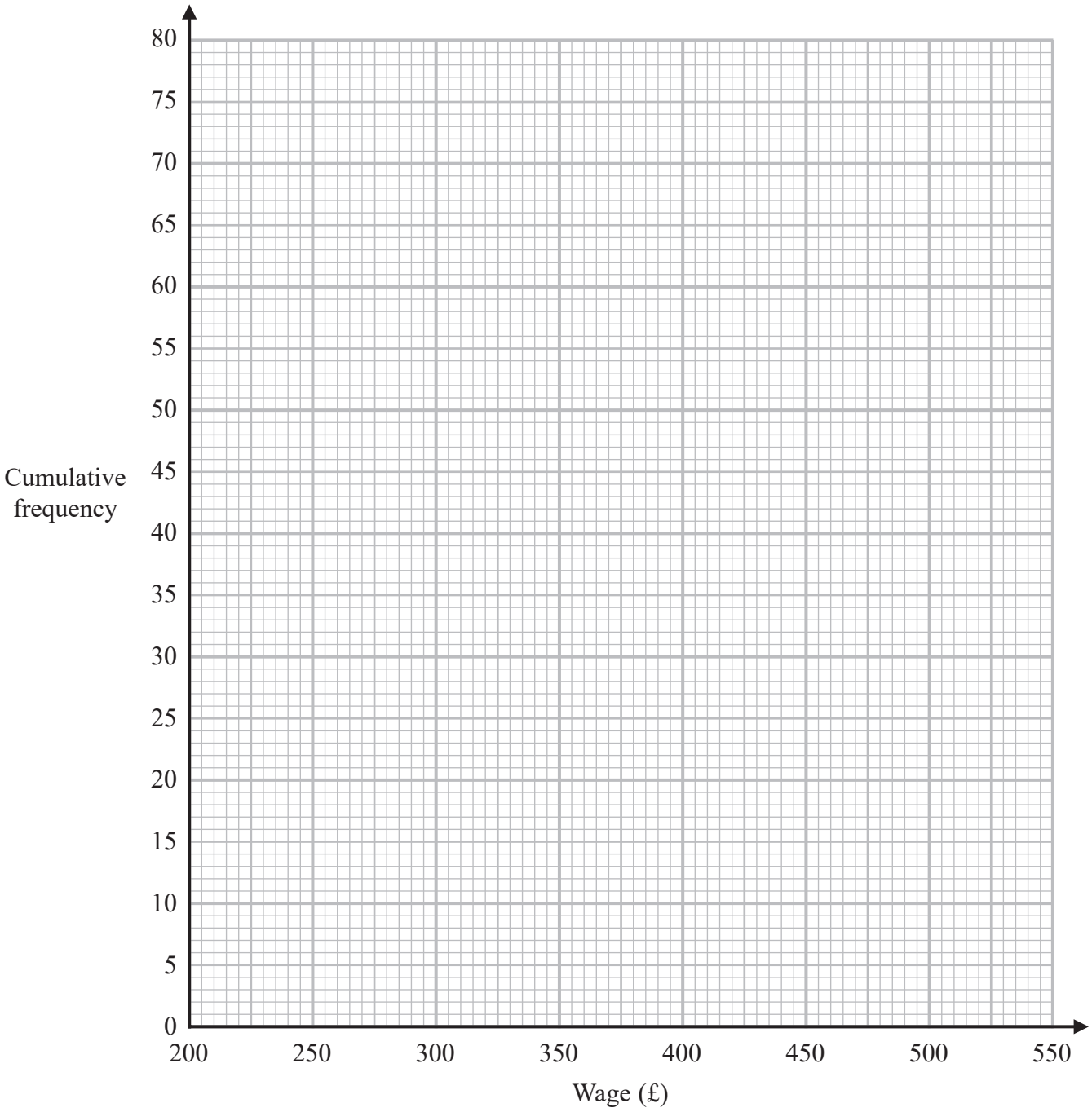
(2)

Juan says

"60% of this group of people have a weekly wage of £360 or less."

(c) Is Juan correct?
You must show how you get your answer.

(3)



(Total for Question 9 is 6 marks)