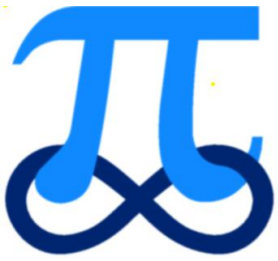
Edexcel

GCSE Maths (1 – 9)

Revision Pack

Statistics



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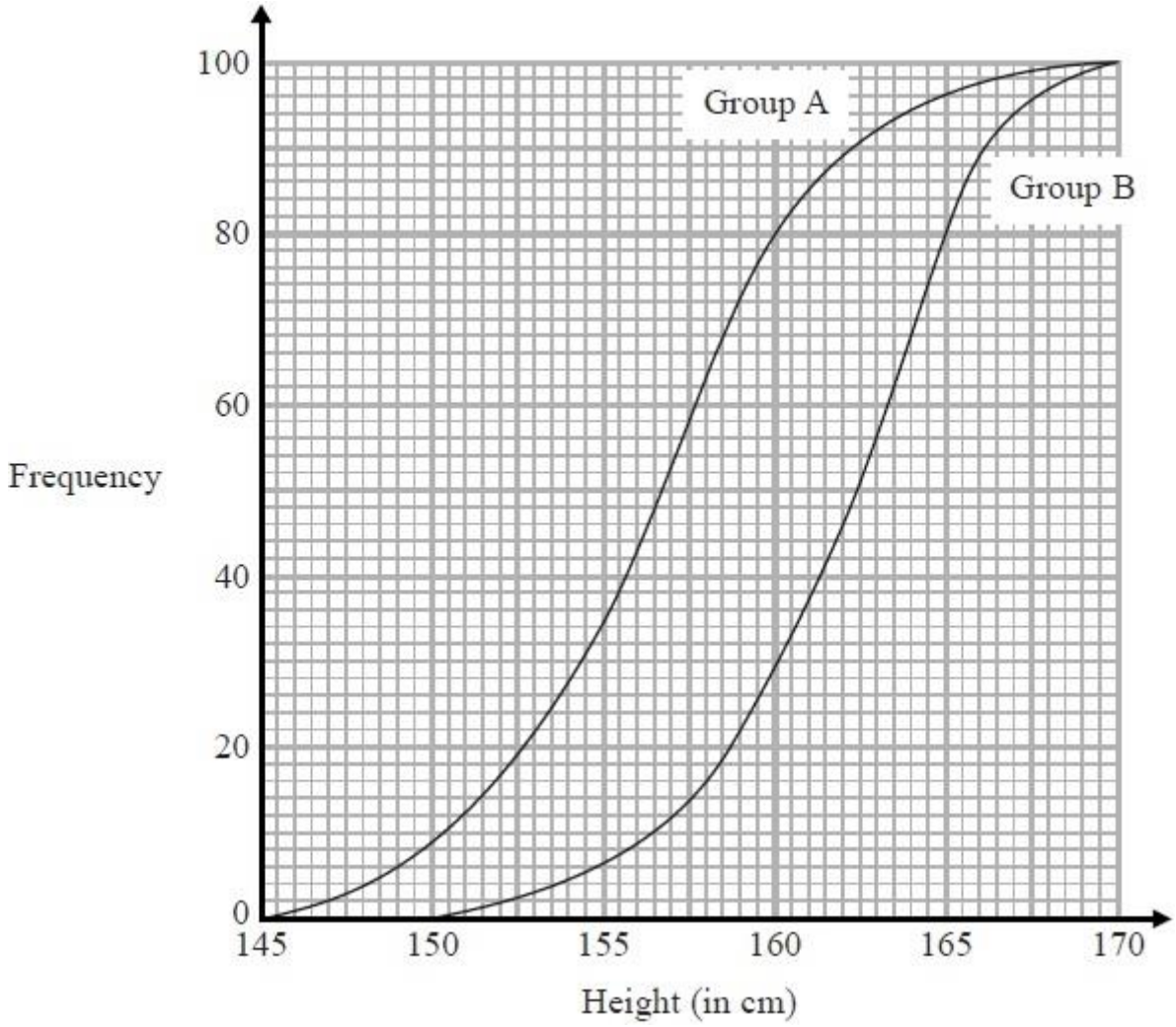
Q1.

The cumulative frequency graphs give information about the heights of two groups of children, group A and group B.



Compare the heights of the children in group A and the heights of the children in group B.

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(Total for Question is 2 marks)

Q2.

***** There are two trays of plants in a greenhouse.
The first tray of plants was given fertiliser.
The second tray of plants was not given fertiliser.

On Monday the heights of the plants were measured in centimetres.
The boxes show some information about the heights of the plants.

Heights of the plants given fertiliser

22	29	30	35	37	40	44	47
48	48	54	56	59	66	72	

Information about the heights of plants not given fertiliser

Smallest	18	Lower quartile	26
Largest	64	Upper quartile	47
Median	44		

Compare the distribution of the heights of the plants given fertiliser to the distribution of the heights of the plants not given fertiliser.

(Total for Question is 4 marks)

Q3.

Lyndsey records the number of miles (m) she drives each day for 120 days.

Some information about the results is given in the table.

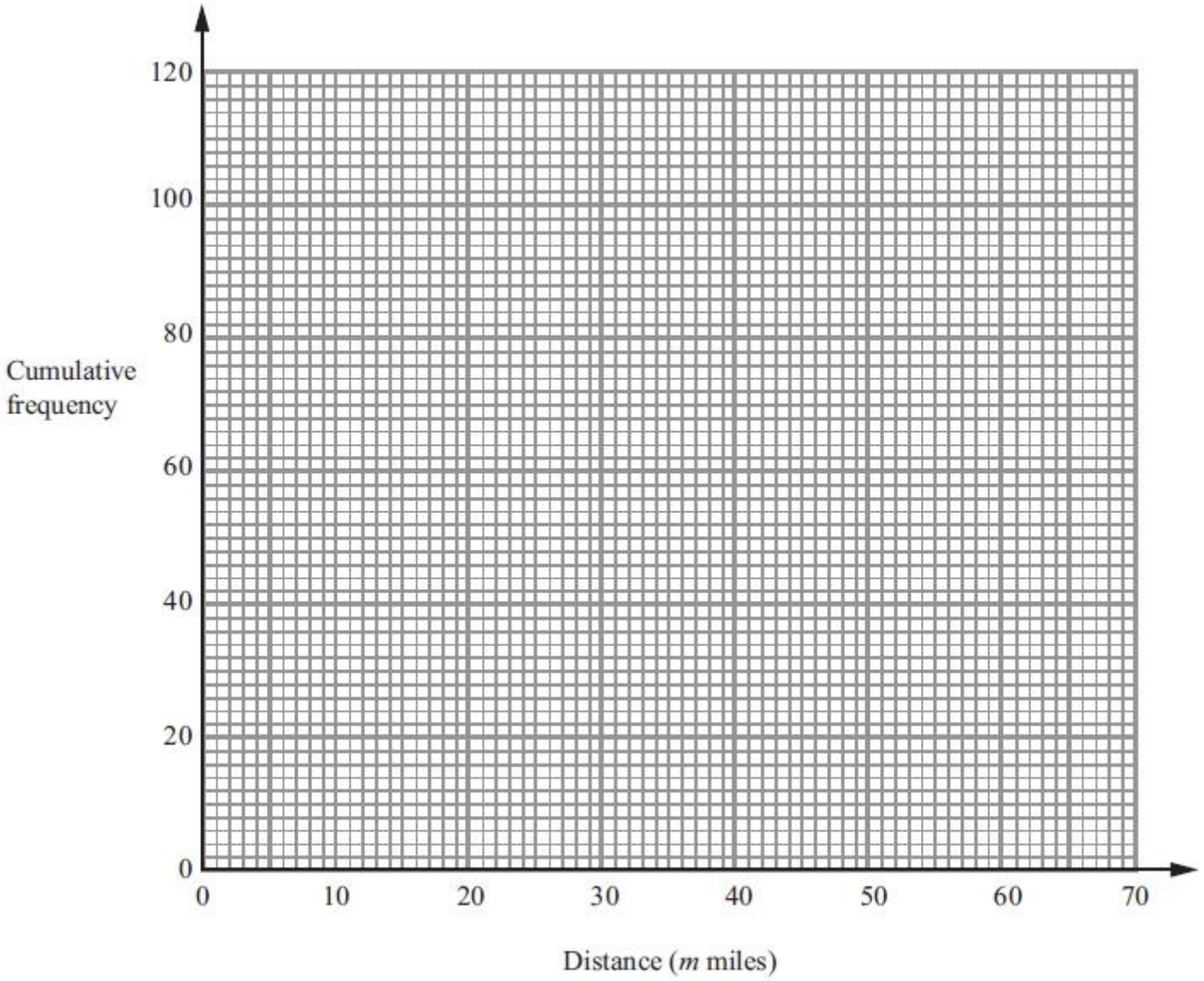
Distance (m miles)	Frequency
$0 < m \leqslant 10$	4
$10 < m \leqslant 20$	18
$20 < m \leqslant 30$	24
$30 < m \leqslant 40$	40
$40 < m \leqslant 50$	24
$50 < m \leqslant 60$	10

(a) Complete the cumulative frequency table.

Distance (m miles)	Cumulative frequency
$0 < m \leqslant 10$	
$0 < m \leqslant 20$	
$0 < m \leqslant 30$	
$0 < m \leqslant 40$	
$0 < m \leqslant 50$	
$0 < m \leqslant 60$	

(1)

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



(2)

(c) Work out an estimate for the number of days on which Lyndsey drives more than 36 miles.

.....days

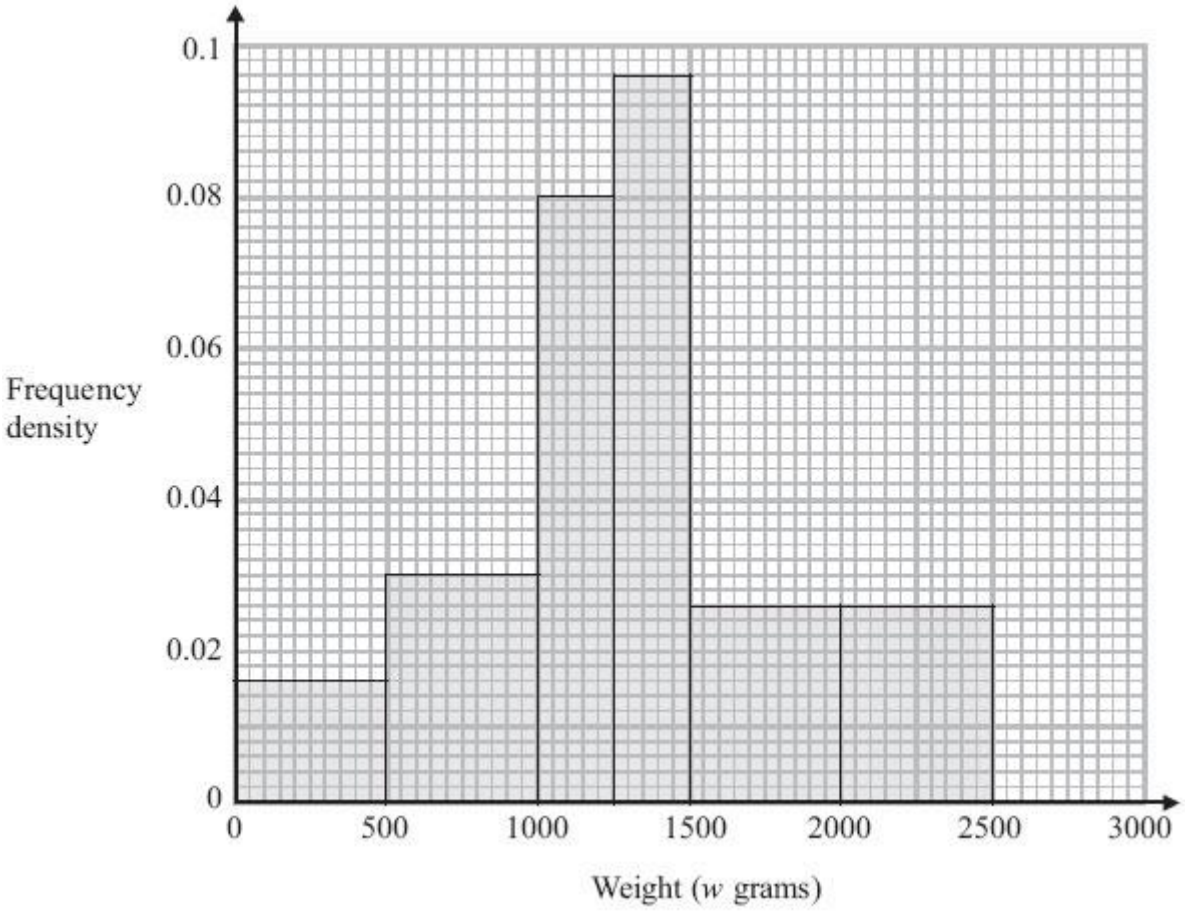
(2)

(Total for Question is 5 marks)

Q4.

Jim went on a fishing holiday.

The histogram shows some information about the weights of the fish he caught.



(a) Use the histogram to complete the frequency table.

Weight (w grams)	Frequency
$0 < w \leqslant 500$	8
$500 < w \leqslant 1000$	
$1000 < w \leqslant 1250$	
$1250 < w \leqslant 1500$	
$1500 < w \leqslant 2500$	

(2)

Jim kept all the fish he caught with a weight greater than 2000 g.

(b) Find the ratio of the number of fish Jim kept to the total number of fish he caught.

.....

(2)

(c) Use the histogram to find an estimate of the median.

(Total for Question is 6 marks)

Q5.

The table shows information about the lengths, in seconds, of 40 TV adverts.

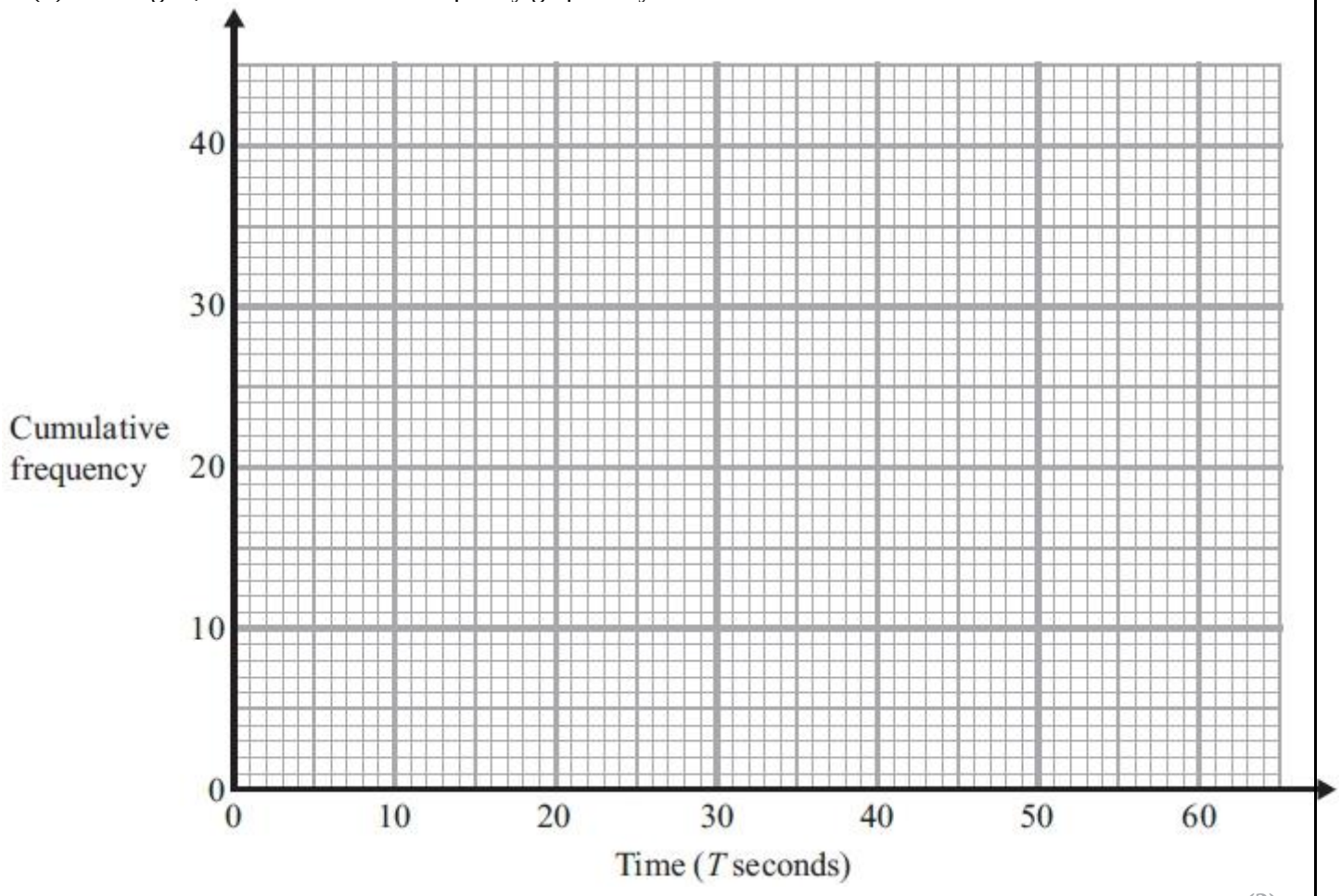
Time (T seconds)	Frequency
$10 < T \leq 20$	4
$20 < T \leq 30$	7
$30 < T \leq 40$	13
$40 < T \leq 50$	12
$50 < T \leq 60$	4

(a) Complete the cumulative frequency table for this information.

Time (T seconds)	Cumulative frequency
$10 < T \leq 20$	4
$10 < T \leq 30$	
$10 < T \leq 40$	
$10 < T \leq 50$	
$10 < T \leq 60$	

(1)

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



(2)

(c) Use your graph to find an estimate for the median length of these TV adverts.

. . . . . seconds

(1)

(Total for Question is 4 marks)

Q6.

Mary plays a game of throwing a ball at a target.

The table shows information about the probability of each possible score.

Score	0	1	2	3	4	6
Probability	0.09	x	$3x$	0.16	0.21	0.30

Mary is 3 times as likely to score 2 points than to score 1 point.

(a) Work out the value of x.

.....

(3)

Mary plays the game twice.

(b) Work out the probability of Mary scoring a total of 8

.....

(3)

(Total for Question is 6 marks)

Q7.

There are yellow discs, red discs, blue discs and green discs in a bag.
Dinesh is going to take at random a disc from the bag.

The table shows each of the probabilities that Dinesh will take a red disc, or a blue disc, or a green disc.

Colour	yellow	red	blue	green
Probability		0.40	0.25	0.15

(a) Work out the probability that he will take a yellow disc.

.....

(2)

Dinesh takes at random a disc from the bag.
He writes down the colour of the disc.
He puts the disc back into the bag.

He will do this 60 times.

(b) Work out an estimate for the number of times he takes a red disc from the bag.

.....

(2)

(Total for Question is 4 marks)

Q8.

There are only red counters, yellow counters, blue counters and green counters in a bag.
Olu takes at random a counter from the bag.

The table shows each of the probabilities.

Colour	**Red**	**Yellow**	**Blue**	**Green**
Probability	0.6	0.25	$2x$	x

The probability that Olu will take a blue counter is twice the probability that he will take a green counter.

(a) Work out the value of x.

.....

(3)

Olu takes a counter from the bag.
He writes down the colour of the counter.
He puts the counter back in the bag.

Olu does this 50 times.

(b) Work out an estimate for the number of times that Olu takes a red counter from the bag.

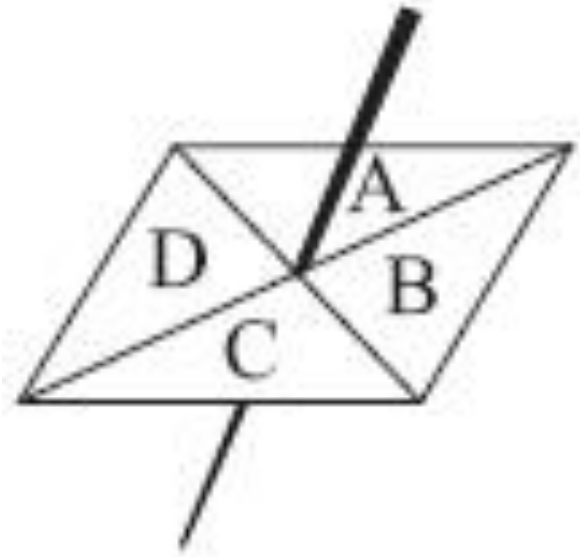
.....

(2)

(Total for question = 5 marks)

Q9.

Here is a four-sided spinner.
The sides of the spinner are labelled A, B, C and D.



The table shows the probability that the spinner will land on A or on B or on D.

Letter	A	B	C	D
Probability	0.12	0.39		0.18

Amber spins the spinner once.

(a) Work out the probability that the spinner will land on C.

.....

(2)

Lucy is going to spin the spinner 50 times.

(b) Work out an estimate for the number of times the spinner will land on A.

.....

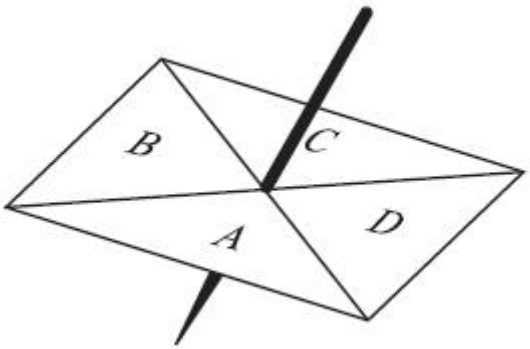
(2)

(Total for Question is 4 marks)

Q10.

Sandy has a 4-sided spinner.
The sides of the spinner are labelled A, B, C and D.
The spinner is biased.

The table shows the probability that the spinner will land on A or on B or on C.



Side	A	B	C	D
Probability	0.15	0.32	0.27	

(a) Work out the probability that the spinner will land on D.

.....

(2)

Sandy spins the spinner 300 times.

(b) Work out an estimate for the number of times the spinner will land on A.

.....

(2)

(Total for Question is 4 marks)

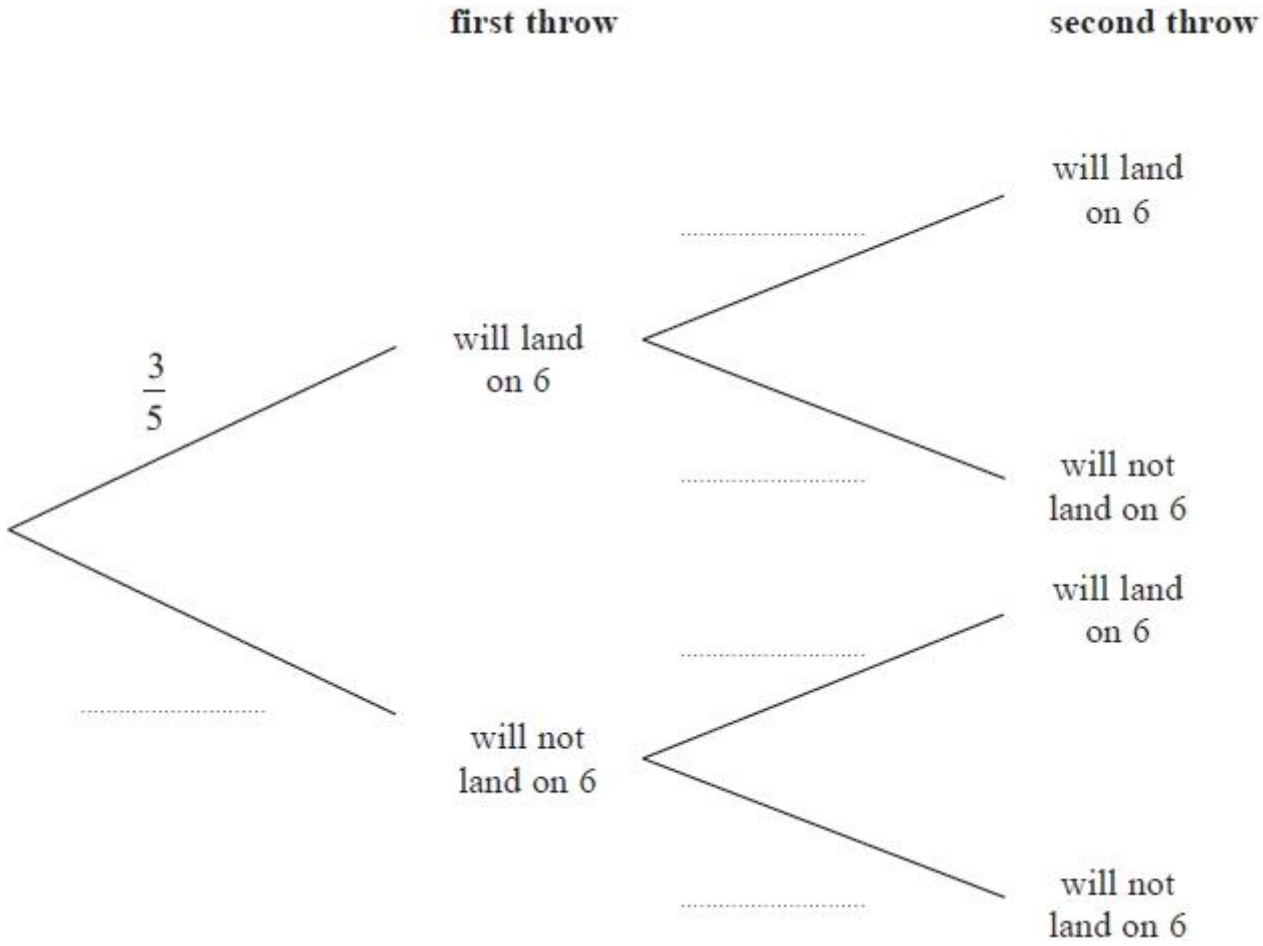
Q11.

Seb has a biased dice.

When the dice is thrown once, the probability that it will land on 6 is $\frac{3}{5}$

Seb is going to throw the dice twice.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that the dice will land on 6 on the first throw and will **not** land on 6 on the second throw.

.....

(2)

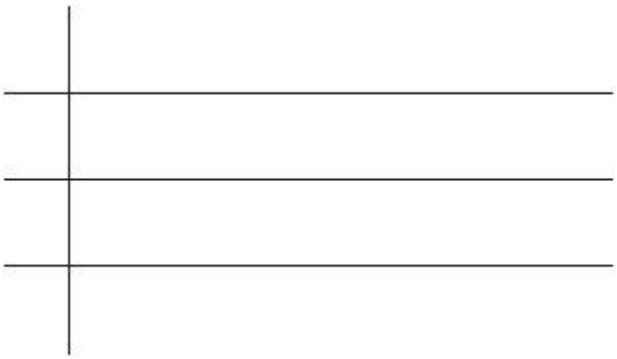
(Total for question = 4 marks)

Q12.

Chloe recorded the test marks of 20 students.

22	29	38	16	36	18	30	21	27	43
14	41	25	38	46	19	48	34	23	46

(a) Show this information in an ordered stem and leaf diagram.



(3)

One of these students is going to be chosen at random.

(b) Find the probability that this student has a test mark less than 28

.....

(2)

(Total for question = 5 marks)

Q13.

The table shows some information about the weights of oranges.

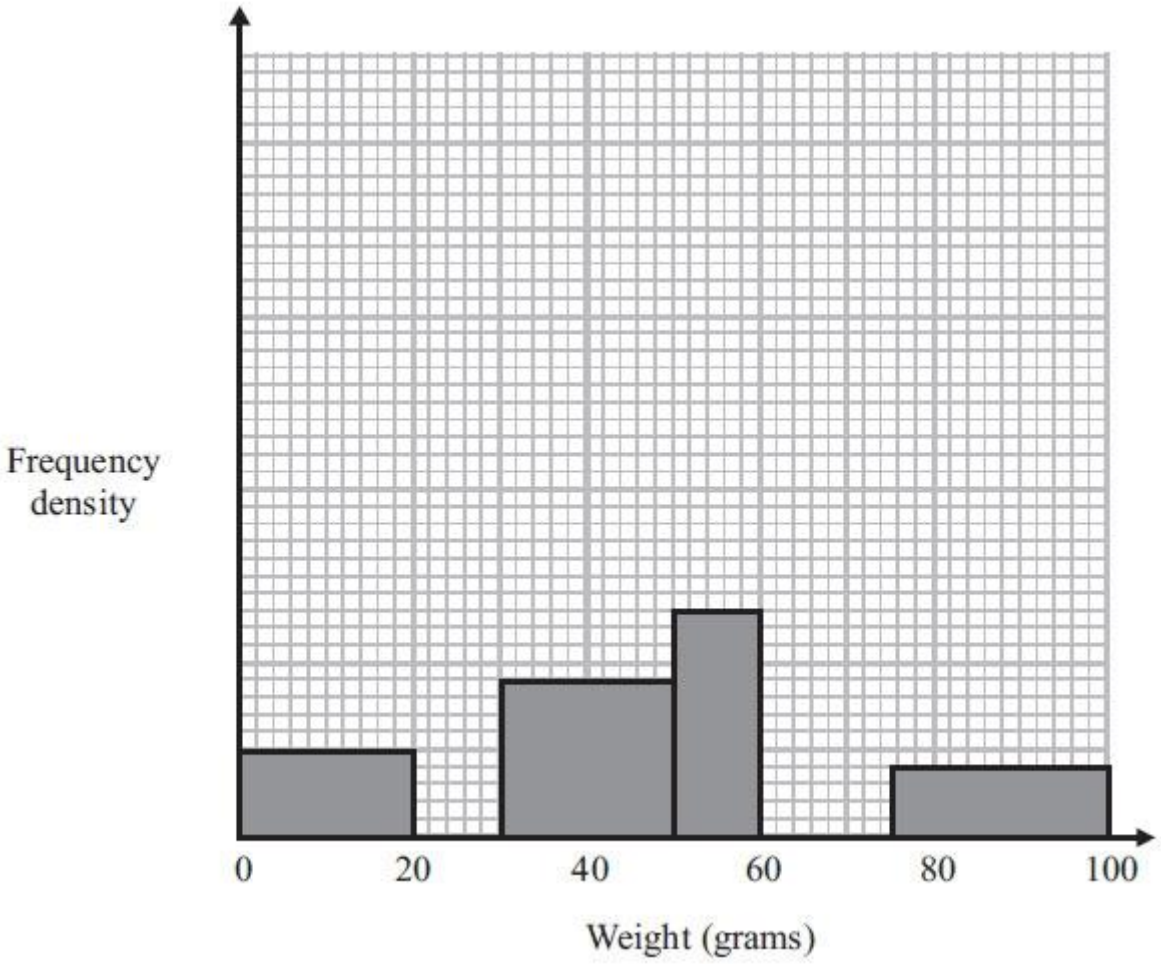
Weight (w grams)	**Frequency**
$0 < w \leq 20$	
$20 < w \leq 30$	15
$30 < w \leq 50$	
$50 < w \leq 60$	13
$60 < w \leq 75$	15
$75 < w \leq 100$	10

(a) Use the histogram to complete the table.

(2)

(b) Use the table to complete the histogram.

(2)

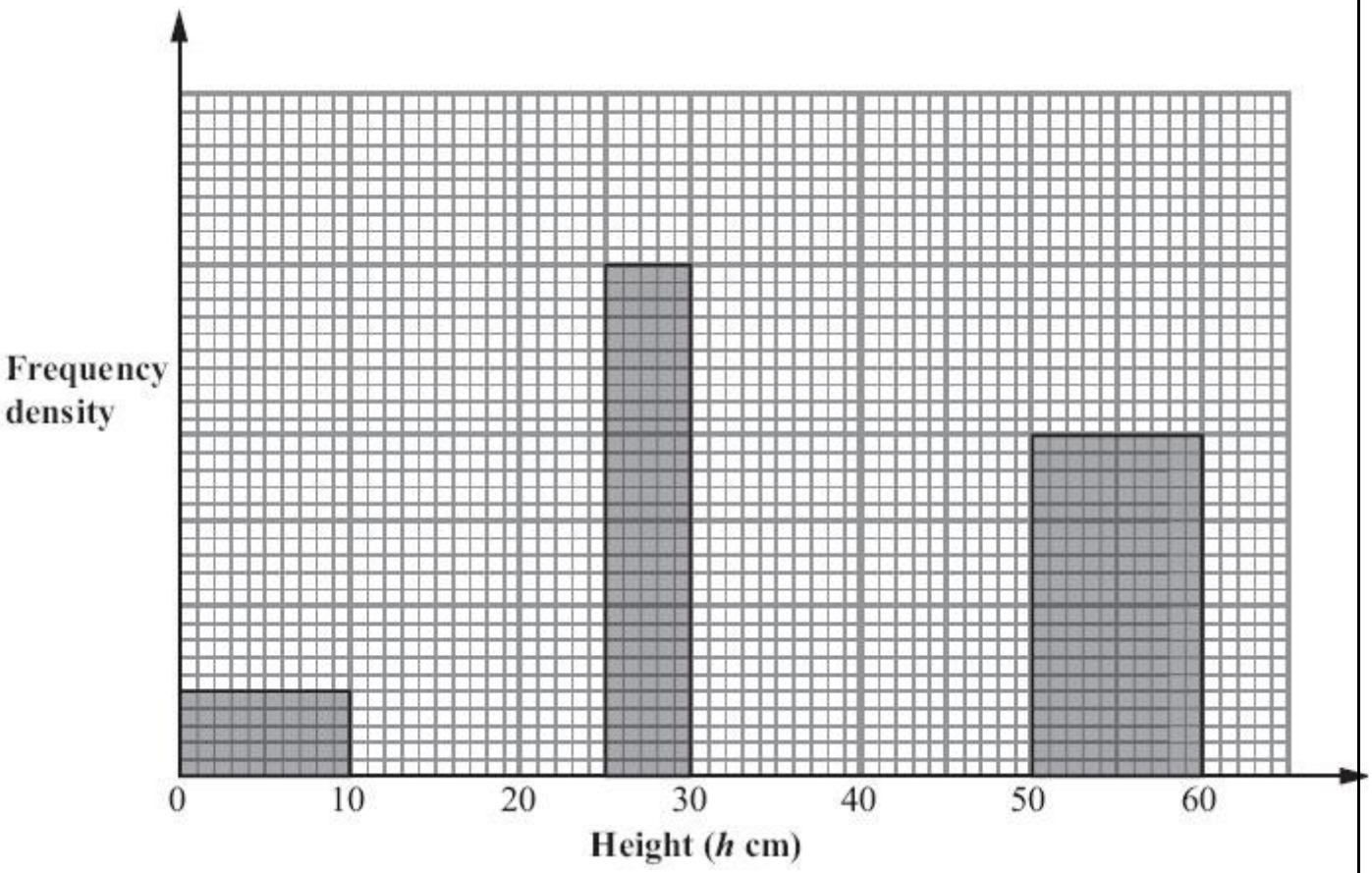


(Total for Question is 4 marks)

Q14.

The incomplete frequency table and histogram give some information about the heights, in centimetres, of some tomato plants.

Height (h cm)	Frequency
$0 < h \leq 10$	
$10 < h \leq 25$	30
$25 < h \leq 30$	
$30 < h \leq 50$	50
$50 < h \leq 60$	20



(a) Use the information in the histogram to complete the table.

(2)

(b) Use the information in the table to complete the histogram.

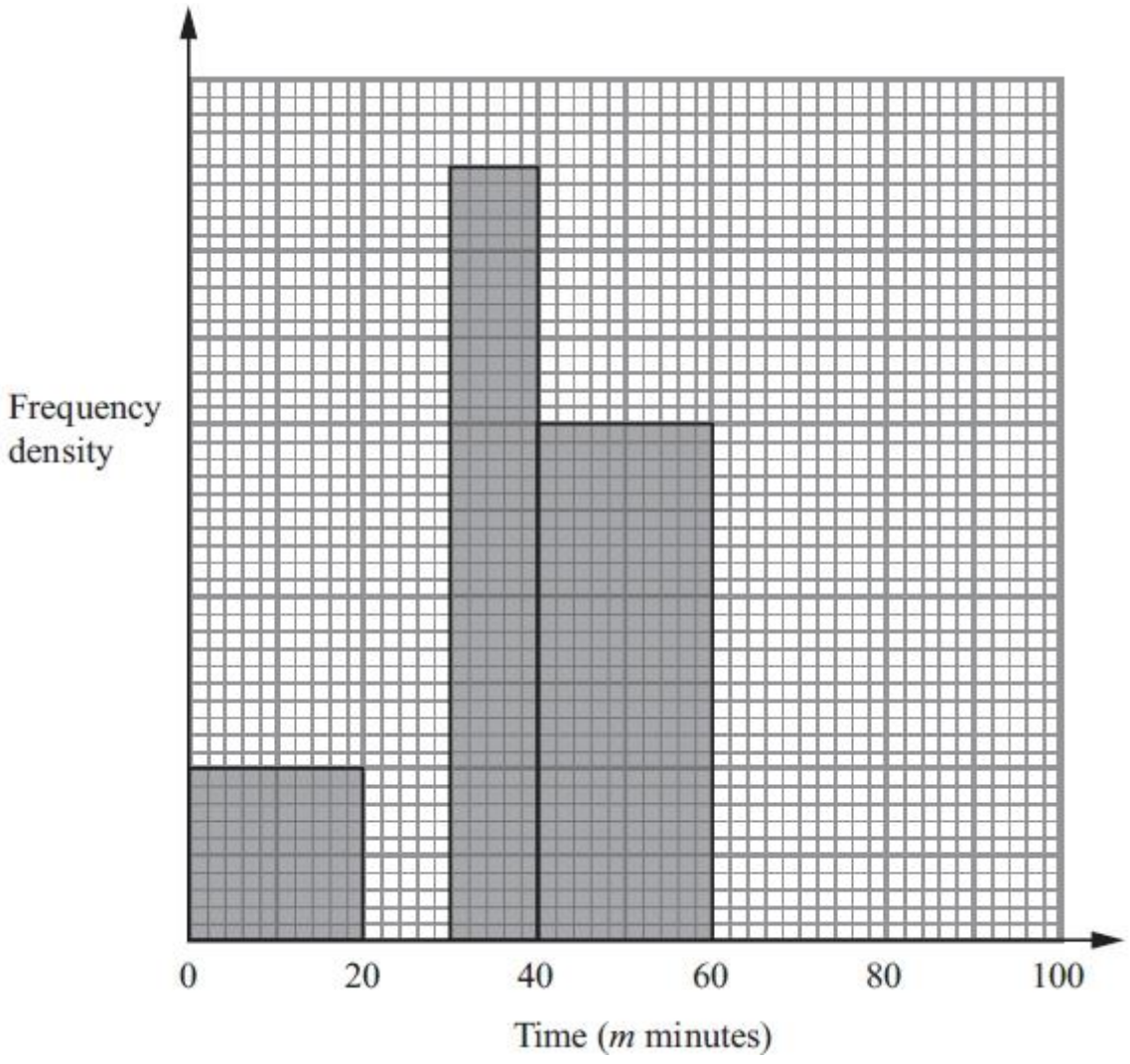
(2)

(Total for Question is 4 marks)

Q15.

The table and the histogram show some information about the time, in minutes, taken by a group of students to travel to college in one week.

Time (m minutes)	Frequency
$0 < m \leqslant 20$	20
$20 < m \leqslant 30$	30
$30 < m \leqslant 40$	
$40 < m \leqslant 60$	
$60 < m \leqslant 100$	48



(a) Use the histogram to complete the table.

(2)

(b) Use the table to complete the histogram.

(2)

(c) Work out an estimate for the median time.

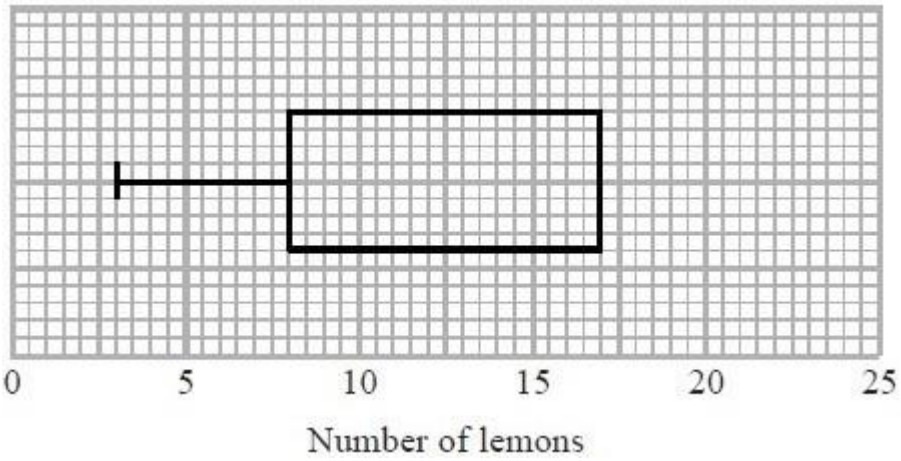
..... minutes

(2)

Q16.

Presta recorded the number of lemons on each of 60 lemon trees.
The incomplete table and box plot give information about her results.

	Number of lemons
Smallest number	
Lower quartile	8
Median	11
Upper quartile	
Greatest number	22



(a) (i) Use the information in the table to complete the box plot.
(ii) Use the information in the box plot to complete the table.

(3)

Some of these 60 lemon trees have 8 or more lemons on them.
(b) Find an estimate for the number of lemon trees with 8 or more lemons on them.

.....

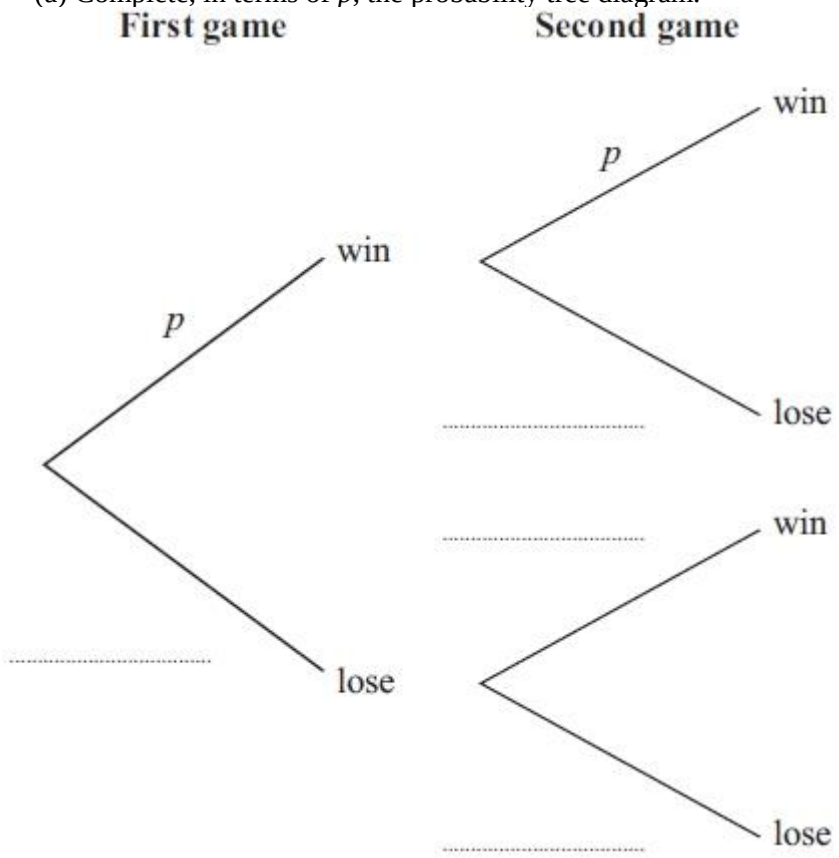
(2)

(Total for Question is 5 marks)

Q17.

The probability that Rebecca will win any game of snooker is p.
She plays two games of snooker.

(a) Complete, in terms of p, the probability tree diagram.



(2)

(b) Write down an expression, in terms of p, for the probability that Rebecca will win both games.

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(1)

(c) Write down an expression, in terms of p, for the probability that Rebecca will win exactly one of the games.

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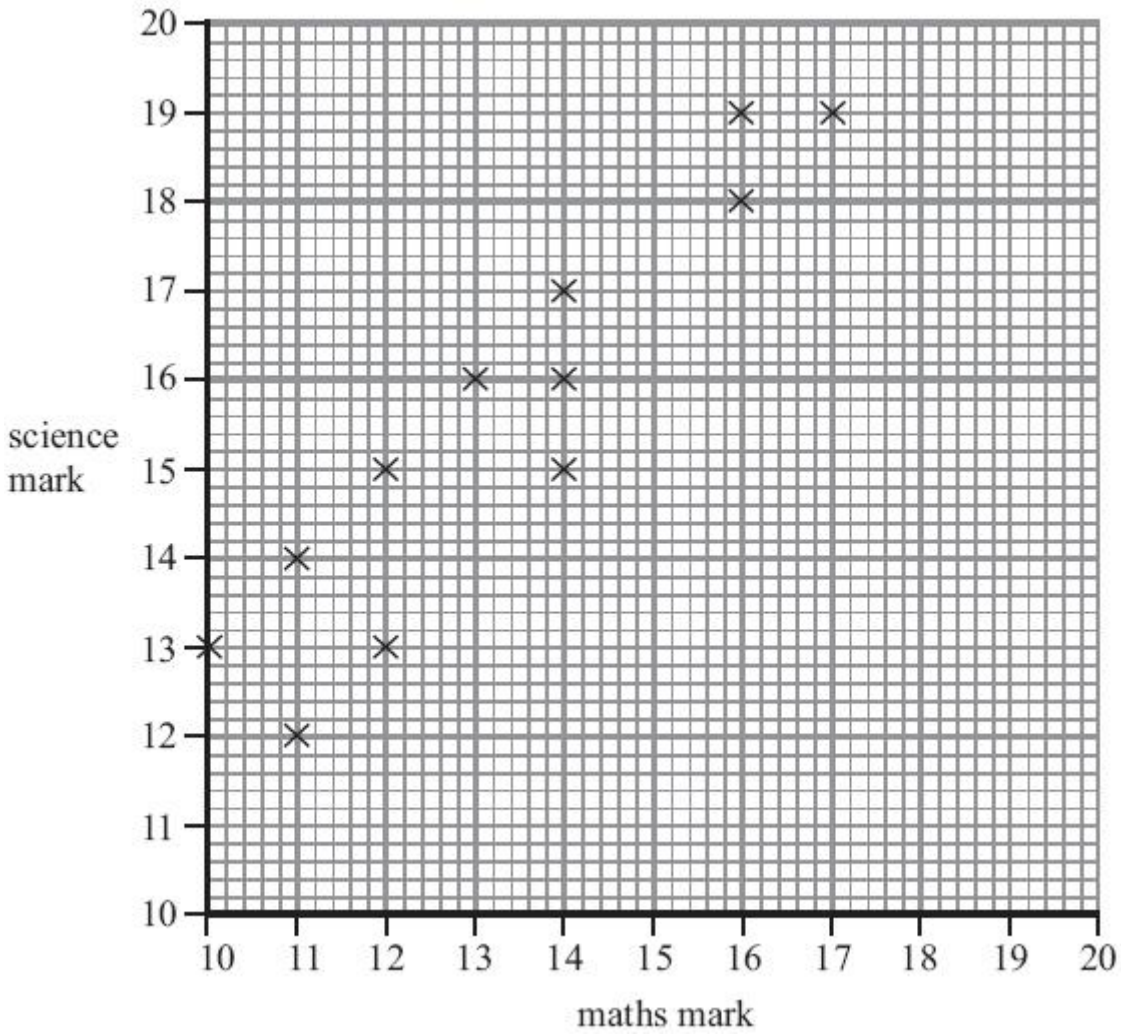
(2)

(Total for Question is 5 marks)

Q18.

Mr Kent's students did a maths test and a science test.
The scatter graph shows the marks of 12 of these students.



The table shows the marks of two more students.

Name	maths	science
Masood	12	14
Nimer	17	20

(a) Show this information on the scatter graph.

(1)

(b) What type of correlation does this scatter graph show?

.....

(1)

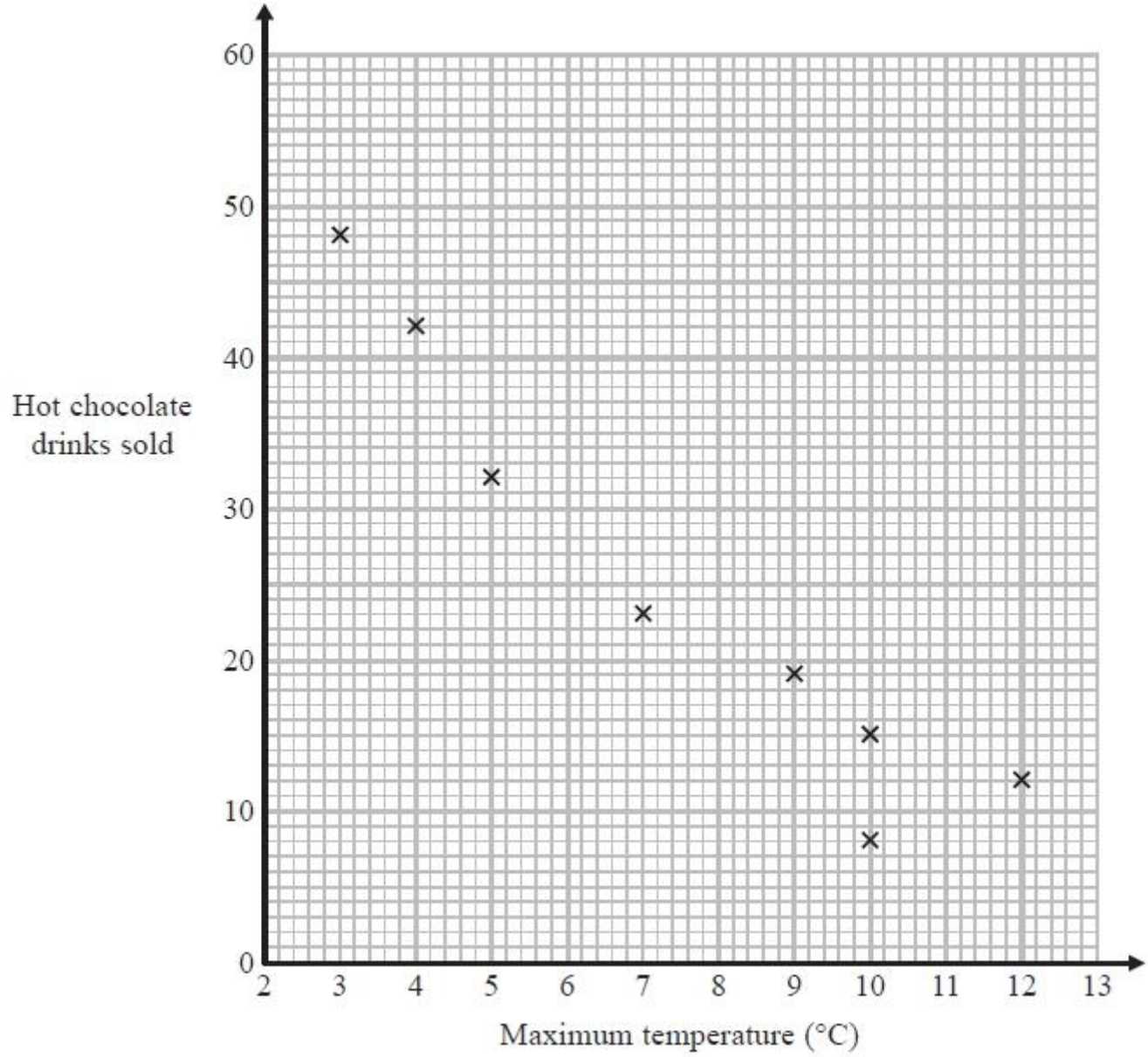
David did the maths test.
He was absent for the science test.

David's mark in the maths test was 15

(c) Estimate a science mark for David.

Q19.

Carlos has a cafe in Clacton.
Each day, he records the maximum temperature in degrees Celsius (°C) in Clacton and the number of hot chocolate drinks sold.



On another day the maximum temperature was 6 °C and 35 hot chocolate drinks were sold.

(a) Show this information on the scatter graph. **(1)**

(b) Describe the relationship between the maximum temperature and the number of hot chocolate drinks sold.

..... **(1)**

(c) Draw a line of best fit on the scatter diagram. **(1)**

One day the maximum temperature was 8 °C.

(d) Use your line of best fit to estimate how many hot chocolate drinks were sold.

.....**(1)**

Q20.

The grouped frequency table shows information about the weekly wages of 80 factory workers.

Weekly wage (£x)	Frequency
$100 < x \leq 200$	8
$200 < x \leq 300$	15
$300 < x \leq 400$	30
$400 < x \leq 500$	17
$500 < x \leq 600$	7
$600 < x \leq 700$	3

(a) Complete the cumulative frequency table.

Weekly wage (£x)	Cumulative Frequency
$100 < x \leq 200$	
$200 < x \leq 300$	
$300 < x \leq 400$	
$400 < x \leq 500$	
$500 < x \leq 600$	
$600 < x \leq 700$	

(1)

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

(2)

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

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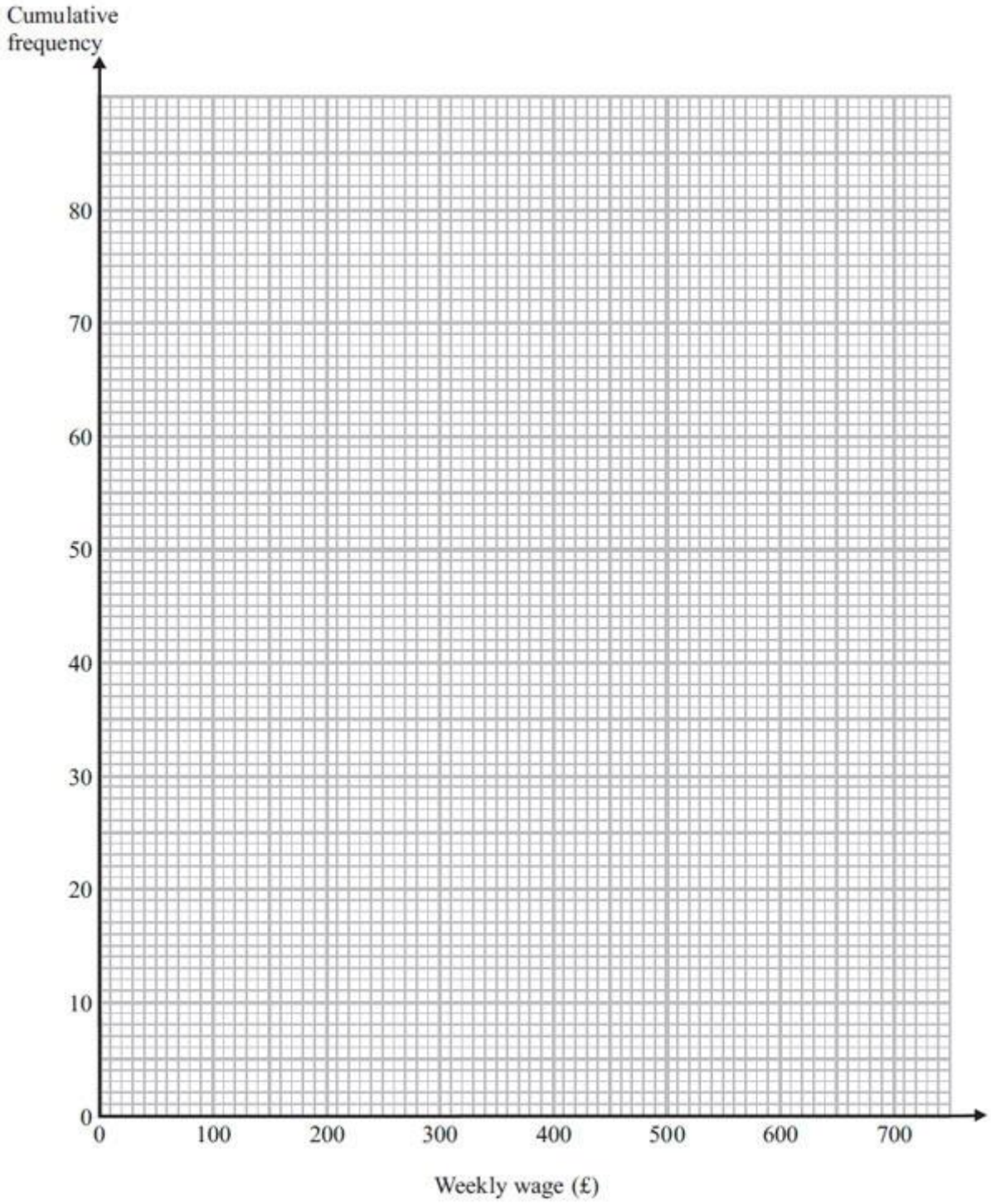
(2)

(d) Use your graph to find an estimate for the number of workers with a weekly wage of more than £530

.....

(2)



(Total for Question is 7 marks)

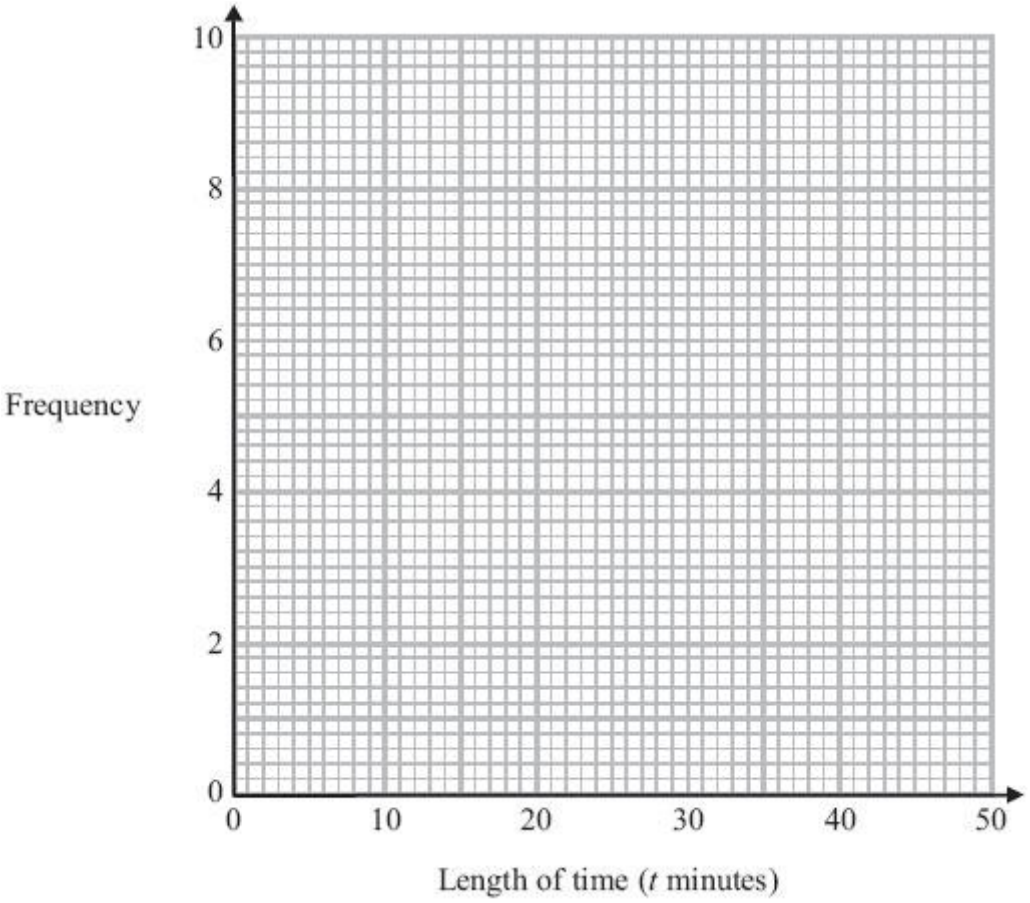
Q21.

Helen went on 35 flights in a hot air balloon last year.

The table gives some information about the length of time, t minutes, of each flight.

Length of time (t minutes)	Frequency
$0 < t \leqslant 10$	6
$10 < t \leqslant 20$	9
$20 < t \leqslant 30$	8
$30 < t \leqslant 40$	7
$40 < t \leqslant 50$	5

On the grid below, draw a frequency polygon for this information.



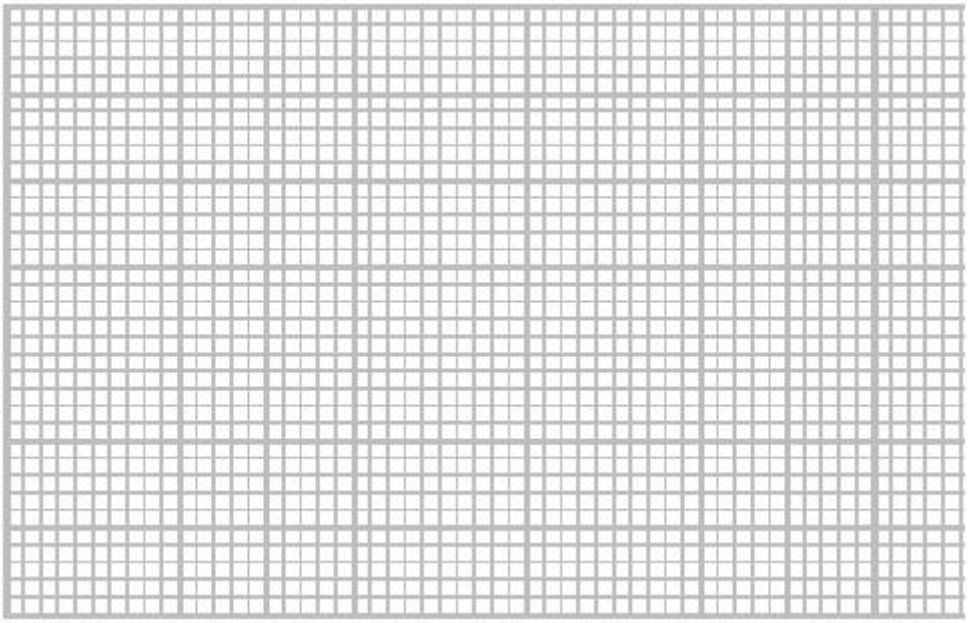
(Total for Question is 2 marks)

Q22.

The table shows some information about the length of time some birds were on a bird table.

Time (t seconds)	Frequency
$0 < t \leqslant 10$	8
$10 < t \leqslant 20$	16
$20 < t \leqslant 25$	15
$25 < t \leqslant 30$	12
$30 < t \leqslant 50$	6

Draw a histogram for the information in the table.



(Total for question = 3 marks)

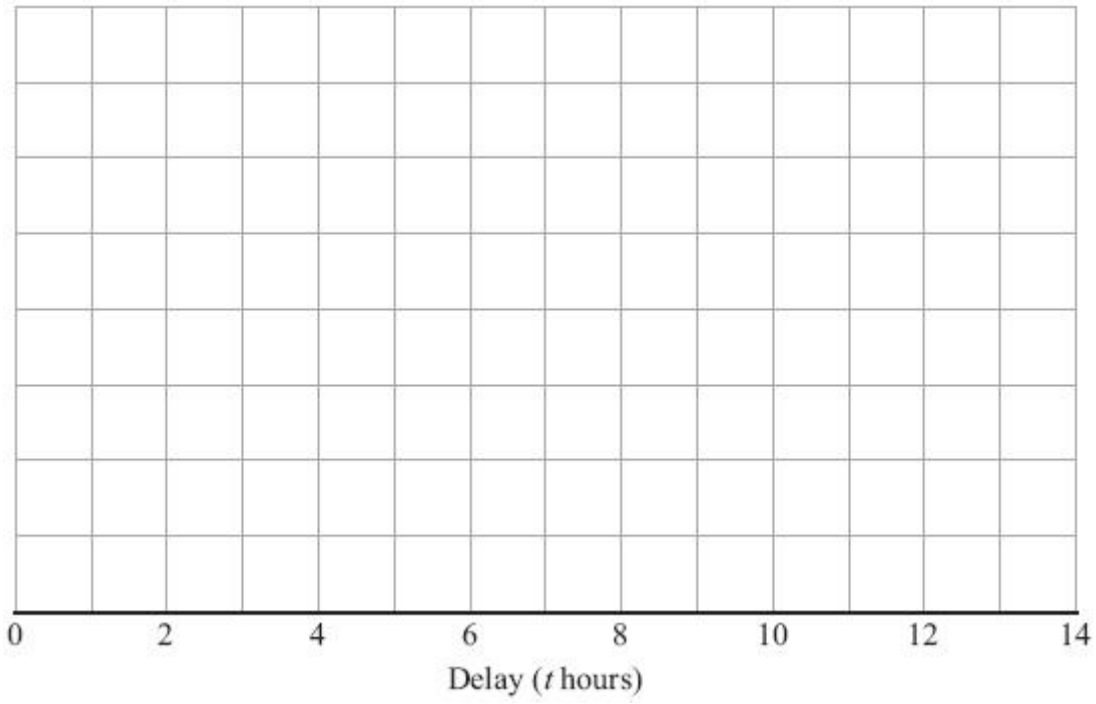
Q23.

During one week in January, the flights from an airport were delayed.

The table shows information about the flight delays on Monday.

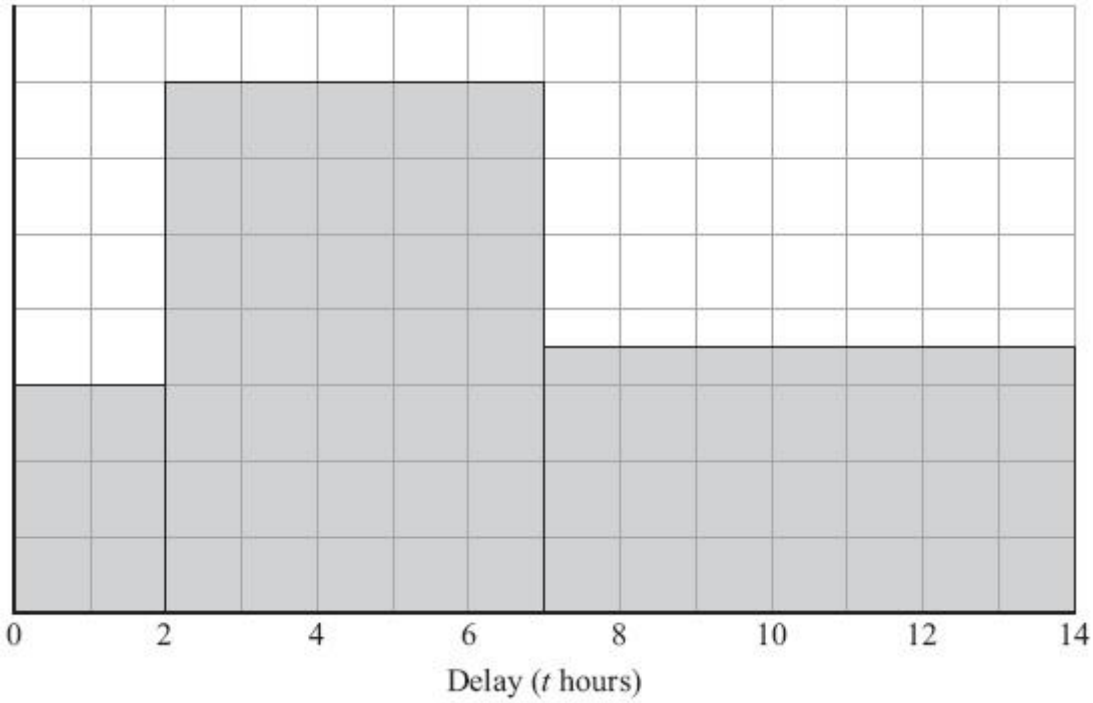
Delay (*t* hours)	**Frequency**
$0 < t \leq 2$	4
$2 < t \leq 7$	60
$7 < t \leq 11$	40
$11 < t \leq 13$	6

(a) Draw a histogram for the information given in the table.



(3)

The histogram below shows information about the flight delays on Tuesday.



12 flights were delayed for up to 2 hours.

Avi says

"A greater number of flights were delayed for more than 7 hours on Monday than for more than 7 hours on Tuesday."

(b) Is Avi correct?
You must explain your answer.

(2)

(Total for Question is 5 marks)

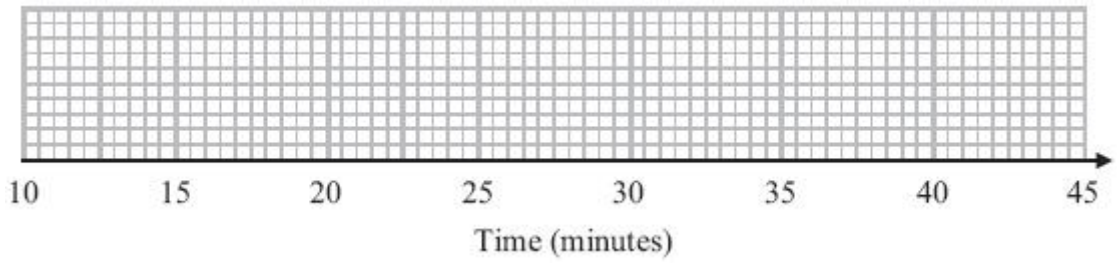
Q24.

Sameena recorded the times, in minutes, some girls took to do a jigsaw puzzle.

Sameena used her results to work out the information in this table.

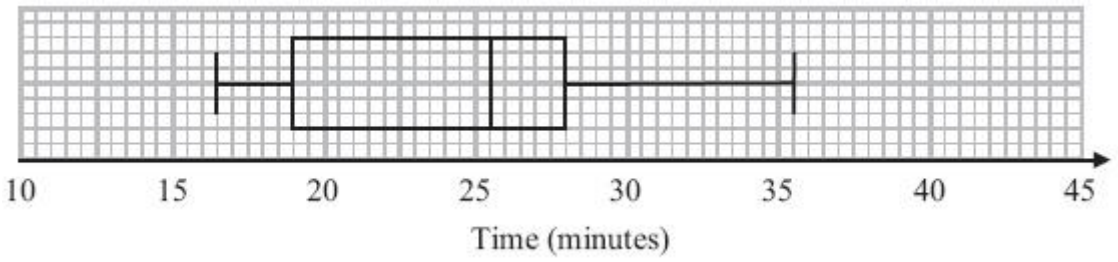
	Minutes
Shortest time	18
Lower quartile	25
Median	29
Upper quartile	33
Longest time	44

(a) On the grid, draw a box plot to show the information in the table.



(2)

The box plot below shows information about the times, in minutes, some boys took to do the same jigsaw puzzle.



(b) Compare the distributions of the girls' times and the boys' times.

.....
.....
.....
.....

(2)

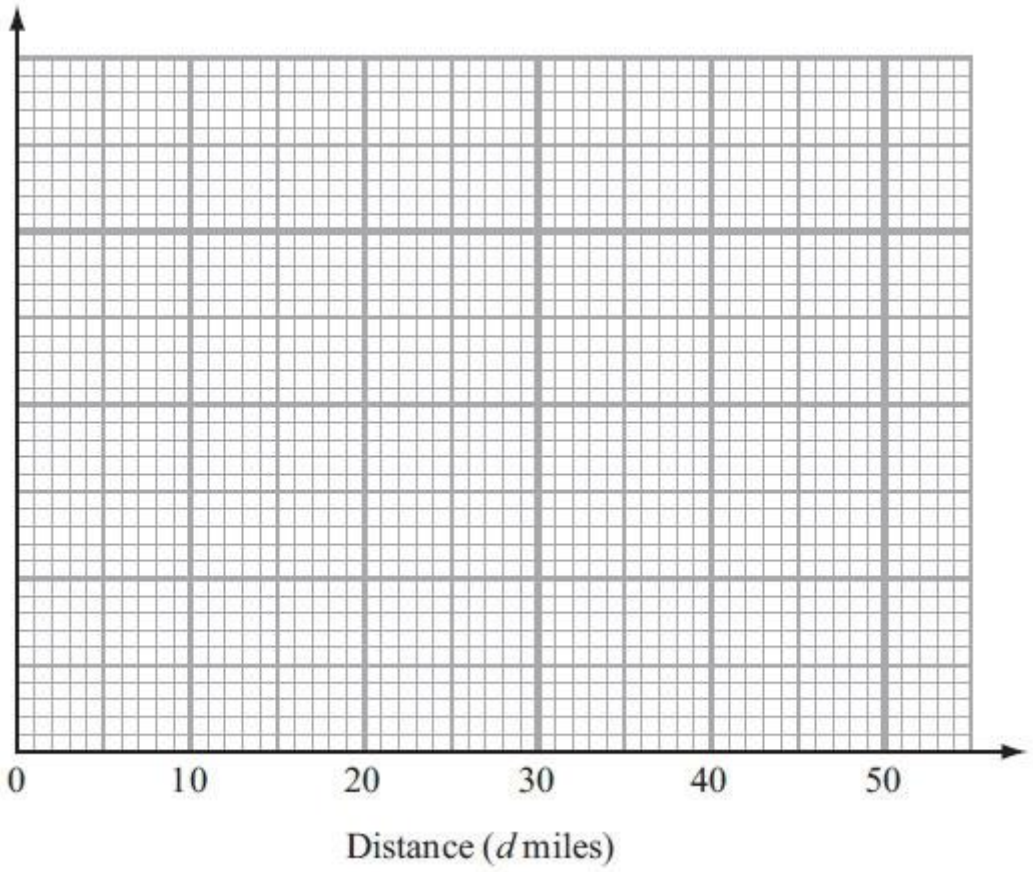
(Total for Question is 4 marks)

Q25.

The table gives some information about the distances, in miles, that some men travelled to work.

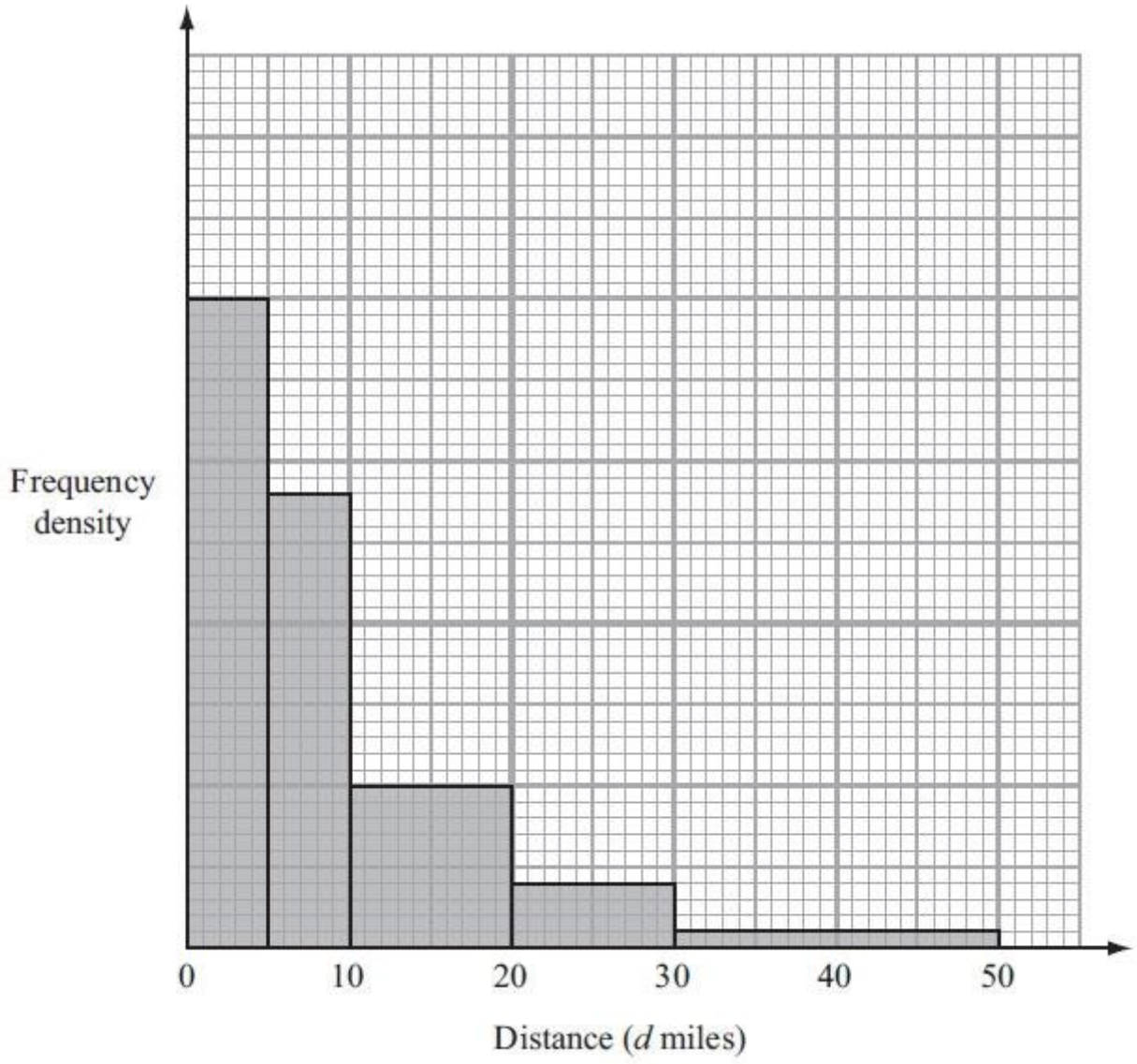
Distance (d miles)	**Frequency**
$0 < d \leq 5$	15
$5 < d \leq 10$	17
$10 < d \leq 20$	10
$20 < d \leq 30$	6
$30 < d \leq 50$	2

(a) Draw a histogram for the information in the table.



(3)

The histogram below shows information about the distances, in miles, that some women travelled to work.



x women travelled between 10 and 20 miles to work.

(b) Find an expression, in terms of x, for the total number of women represented by the histogram.

. . . . . .

(2)

(Total for Question is 5 marks)

Q26.

Charlotte grows some potatoes.

The table shows information about the weights of her potatoes.

Weight (w grams)	Frequency
$100 < w \leqslant 120$	5
$120 < w \leqslant 140$	25
$140 < w \leqslant 160$	30
$160 < w \leqslant 180$	15
$180 < w \leqslant 200$	5

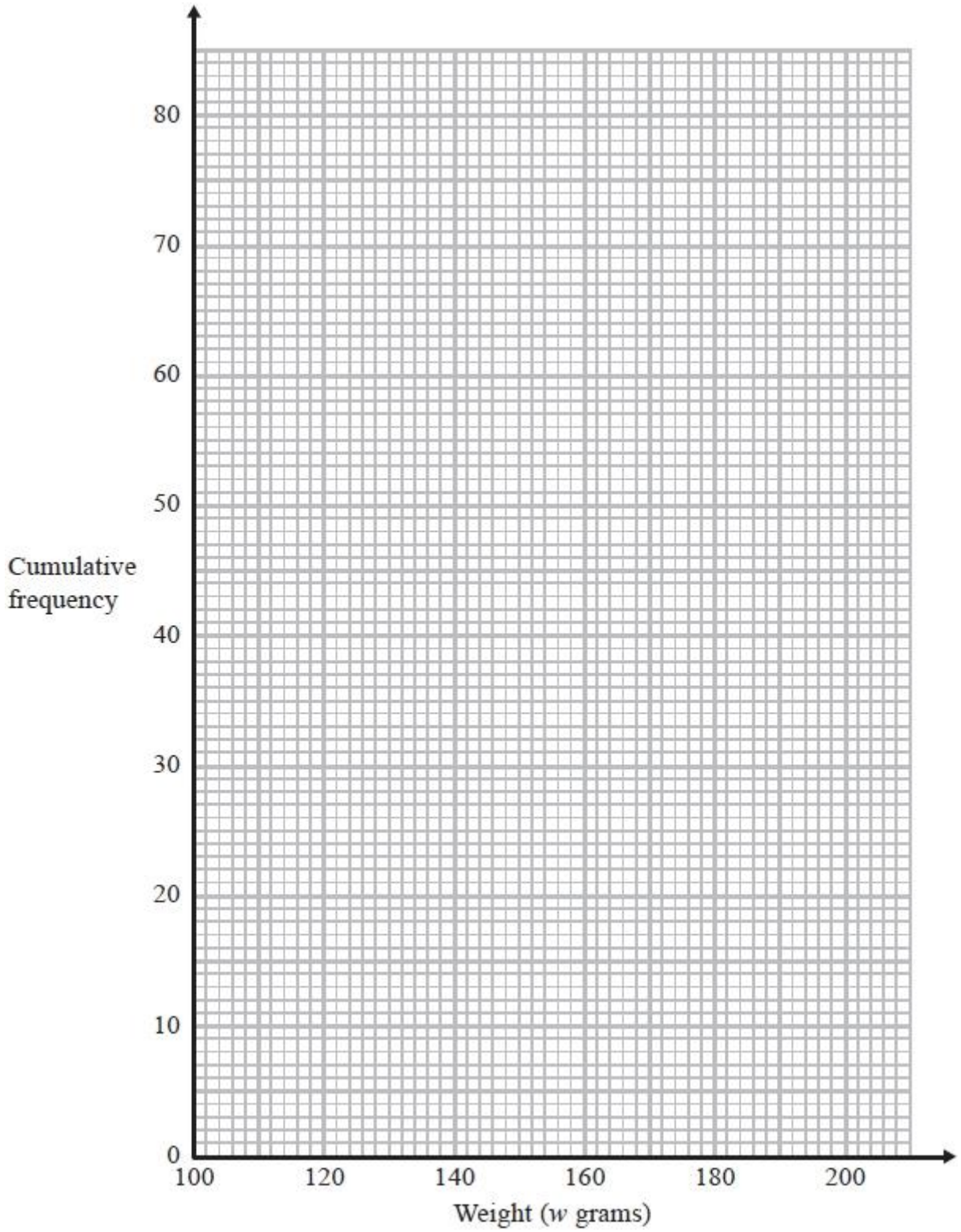
(a) Complete the cumulative frequency table.

Weight (w grams)	Cumulative frequency
$100 < w \leqslant 120$	
$100 < w \leqslant 140$	
$100 < w \leqslant 160$	
$100 < w \leqslant 180$	
$100 < w \leqslant 200$	

(1)

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

(2)



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

..... grams

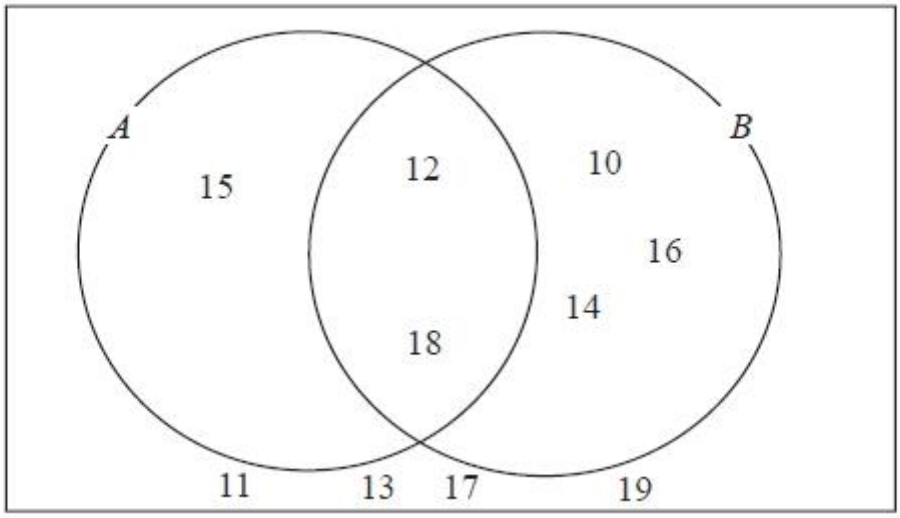
(2)

(d) Use your graph to find an estimate for the percentage of Charlotte's potatoes with a weight less than 150 grams.

..... %

Q27.

Here is a Venn diagram.



(a) Write down the numbers that are in set

(i) $A \cup B$

.....

(ii) $A \cap B$

.....

(2)

One of the numbers in the diagram is chosen at random.

(b) Find the probability that the number is in set A'

.....

(2)

(Total for question = 4 marks)

Q28.

There are n sweets in a bag.
6 of the sweets are orange.
The rest of the sweets are yellow.

Hannah takes at random a sweet from the bag.
She eats the sweet.

Hannah then takes at random another sweet from the bag.
She eats the sweet.

The probability that Hannah eats two orange sweets is $\frac{1}{3}$

(a) Show that $n^2 - n - 90 = 0$

(3)

(b) Solve $n^2 - n - 90 = 0$ to find the value of n.

.....

(3)

(Total for question = 6 marks)

Q29.
The table shows information about 1065 students.

	Male	Female
Year 7	126	109
Year 8	112	134
Year 9	121	114
Year 10	87	94
Year 11	88	80

Elena takes a stratified sample of 120 students by year group and by gender.

Work out the number of Year 8 female students in her sample.

.....

(Total for Question is 2 marks)

Q30.

Henri is carrying out a survey of the people aged 65 and over in his village.

The table shows information about these people.

Age	Male	Female
65 – 69	20	22
70 – 74	18	21
75 – 79	15	18
80 – 84	8	16
85 – 89	5	10
90+	2	5
Total	**68**	**92**

Henri is going to take a sample of 30 people stratified by age.

How many people aged 75 – 79 should be in the sample?

.....

(Total for Question is 3 marks)