Chhetri Academy

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GCSE MATHS

Statistics

Edexcel 1MA1 | Subtopic collection Topic 56

Charts, diagrams and time series

Higher tier

Past paper question booklet

77	2009-2025	Higher
question groups	available papers	tier

Before you begin

1. Show working and use units where appropriate.
2. Use extra paper if you need more space.
3. Print at actual size (100%) for measurement questions.

Name _____ **Date** _____

Whole questions are retained for context; some parts cover other points. Legacy sources are labelled.

1. The two-way table gives some information about how 100 children travelled to school one day.

	Walk	Car	Other	Total
Boy	15		14	54
Girl		8	16	
Total	37			100

(a) Complete the two-way table.

(3)

One of the children is picked at random.

(b) Write down the probability that this child walked to school that day.

.....

(1)

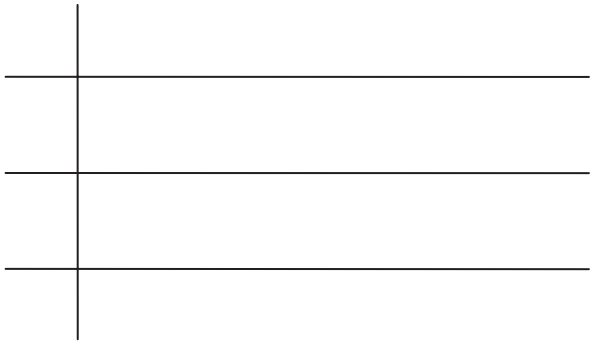
(Total 4 marks)

Q1

5. Here are the weights in grams, to the nearest gram, of 15 eggs.

33	46	41	54	51
38	60	44	55	51
62	55	52	37	63

(a) Complete the ordered stem and leaf diagram to show this information.
You must include a key.



Key

(3)

Meg is going to pick at random one of the eggs.

(b) Work out the probability that this egg will have a weight of more than 45 grams.

.....

(2)

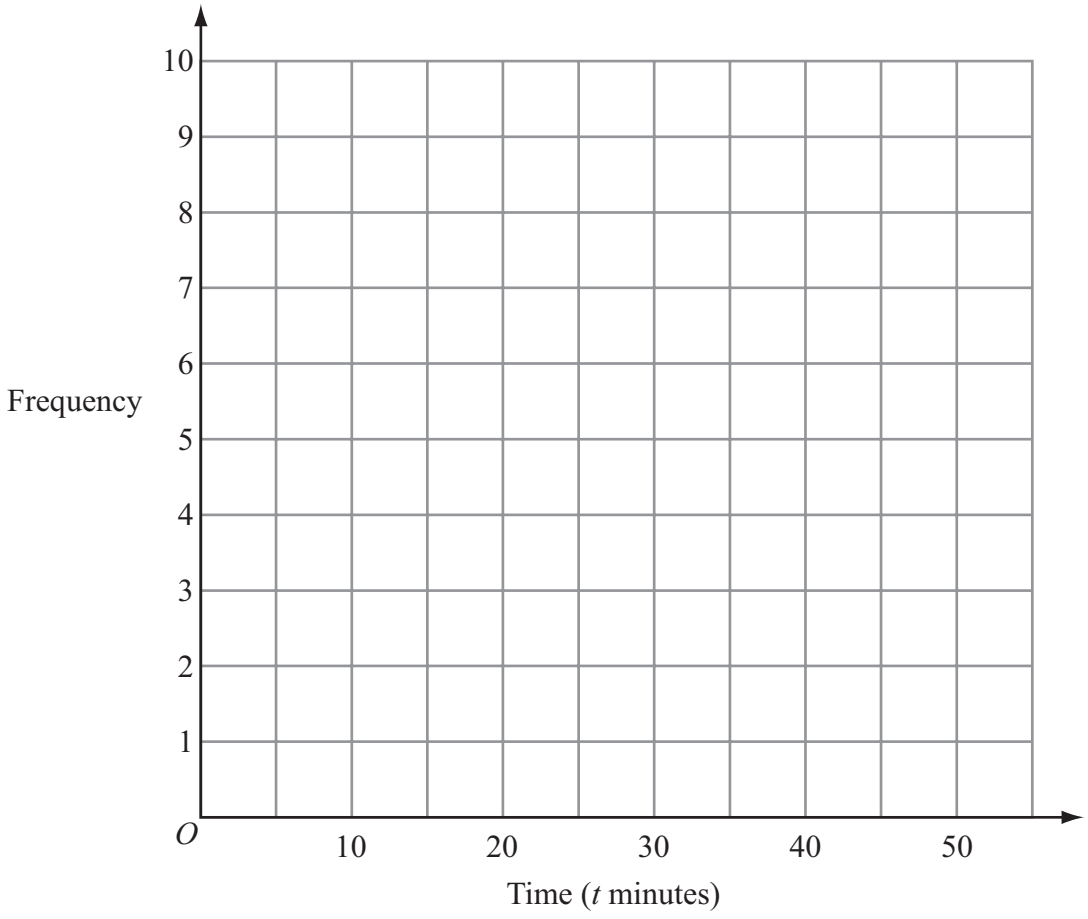
Q5

(Total 5 marks)

6. 30 students took a test.
The table shows information about how long it took them to complete the test.

Time (t minutes)	Frequency
$0 < t \leqslant 10$	5
$10 < t \leqslant 20$	7
$20 < t \leqslant 30$	8
$30 < t \leqslant 40$	6
$40 < t \leqslant 50$	4

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



(2)

(b) Write down the modal class interval.

.....

(1)

Q6

(Total 3 marks)

1. Ali asked 200 students which sport they like best.
They could choose swimming or tennis or athletics.

The two-way table shows some information about their answers.

	Swimming	Tennis	Athletics	Total
Female			19	
Male	36	42		
Total	79		54	200

Complete the two-way table.

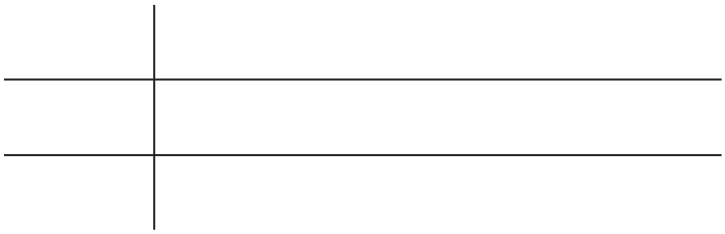
Q1

(Total 3 marks)

2. Here are the weights, in grams, of 16 eggs.

47	45	50	53	43	61	53	62
58	56	57	47	55	62	58	58

Draw an ordered stem and leaf diagram to show this information.
You must include a key.



Key:

Q2

(Total 3 marks)

Blank

8. Sasha carried out a survey of 60 students.
She asked them how many CDs they each have.

This table shows information about the numbers of CDs these students have.

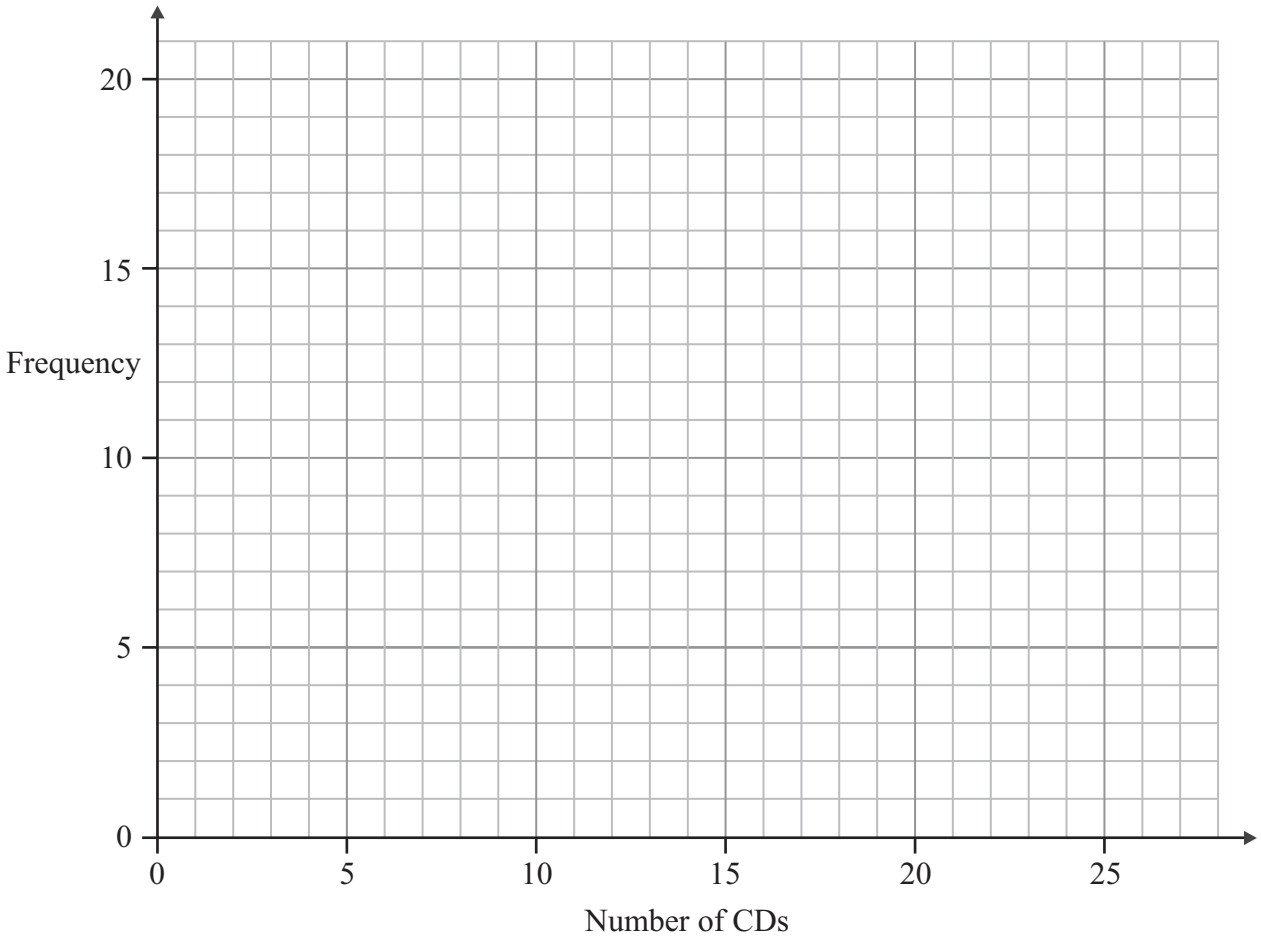
Number of CDs	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24
Frequency	8	11	9	14	18

(a) Write down the class interval containing the median.

.....

(1)

(b) On the grid, draw a frequency polygon to show the information given in the table.



(2) **Q8**

(Total 3 marks)

Blank

10. Chris plays golf.

Here are 15 of his scores.

69	78	82	86	77
83	91	77	92	80
74	81	83	77	72

(a) Draw an ordered stem and leaf diagram to show this information.

You must include a key.



Key:

(3)

(b) Write down the mode.

.....

(1)

(Total 4 marks)

Q10

8. The table shows some information about the ages, in years, of 60 people.

Age (in years)	Frequency
0 to 9	6
10 to 19	13
20 to 29	12
30 to 39	9
40 to 49	7
50 to 59	3
60 to 69	10

(a) Write down the modal class.

.....

(1)

Luke says

'The median lies in the class 30 to 39'

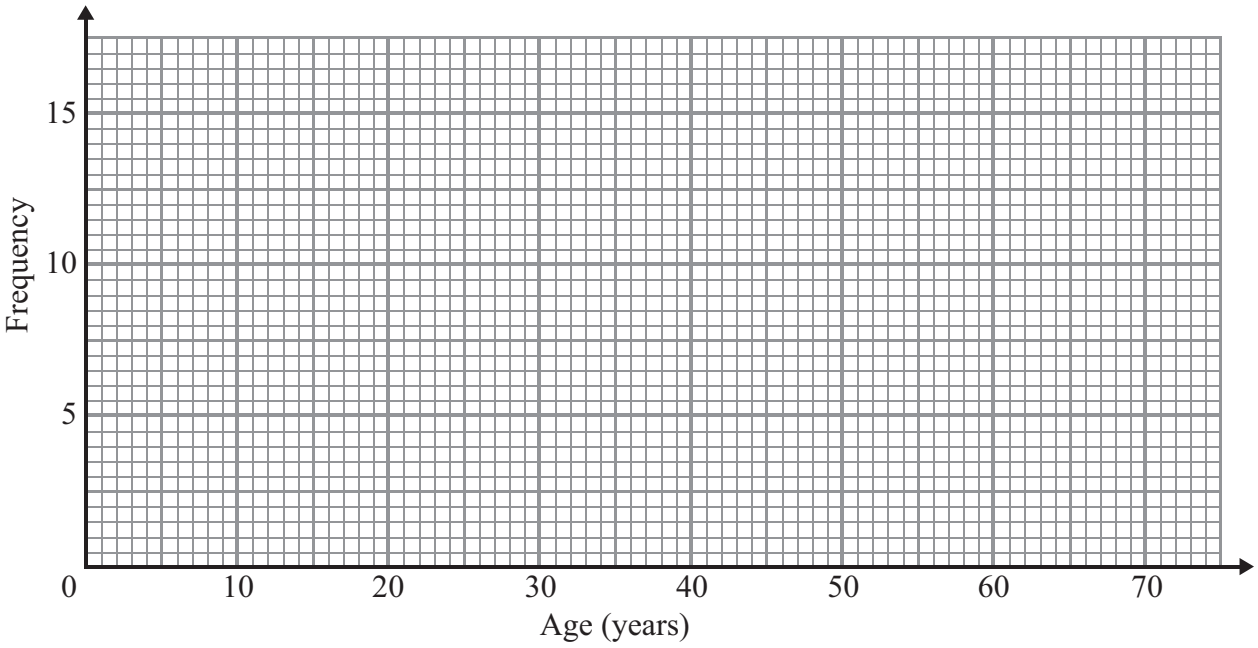
Luke is wrong.

(b) Explain why.

.....

.....

(1)



(c) On the grid, draw a frequency polygon for the information in the table.

(2)

(Total 4 marks)

Q8

3 Ouzma wants to find out the method of transport people use to travel to a shopping centre.

Design a suitable data collection sheet she could use to collect this information.

(Total for Question 3 is 3 marks)

***4** Zoe recorded the heart rates, in beats per minute, of each of 15 people.
Zoe then asked the 15 people to walk up some stairs.
She recorded their heart rates again.

She showed her results in a back-to-back stem and leaf diagram.

Before							After			
				9	8	5				
7	6	6	4	1	0	6	5	8	8	9
	9	8	6	3	2	7	2	4	7	8
				4	1	8	5	6	8	
						9	1	3	7	
						10	2			

Key for before
8 | 5 means 58
beats per minute

Key for after
6 | 5 means 65
beats per minute

Compare the heart rates of the people before they walked up the stairs with their heart rates after they walked up the stairs.

(Total for Question 4 is 6 marks)

6 120 children went on a school activities day.
Some children went bowling.
Some children went to the cinema.
The rest of the children went skating.

66 of these children were girls.
28 of the 66 girls went bowling.
36 children went to the cinema.
20 of the children who went to the cinema were girls.
15 boys went skating.

Work out the number of children who went bowling.

.....

(Total for Question 6 is 4 marks)

4 A teacher asked 30 students if they had a school lunch or a packed lunch or if they went home for lunch.

17 of the students were boys.
4 of the boys had a packed lunch.
7 girls had a school lunch.
3 of the 5 students who went home were boys.

Work out the number of students who had a packed lunch.

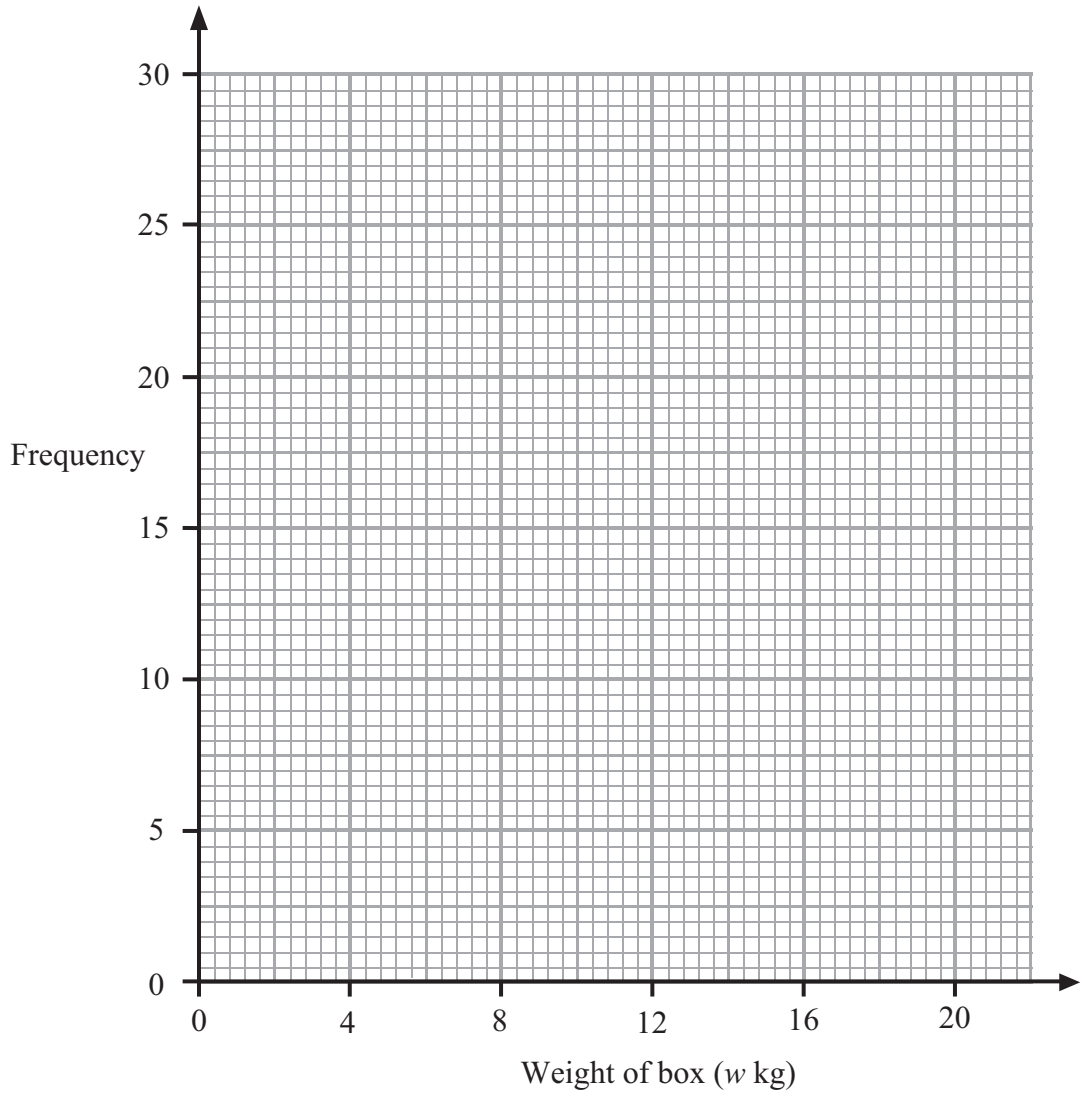
.....

(Total for Question 4 is 4 marks)

13. The table shows some information about the weights, in kg, of 100 boxes.

Weight of box (w kg)	Frequency
$0 < w \leqslant 4$	10
$4 < w \leqslant 8$	17
$8 < w \leqslant 12$	28
$12 < w \leqslant 16$	25
$16 < w \leqslant 20$	20

Draw a frequency polygon to show this information.



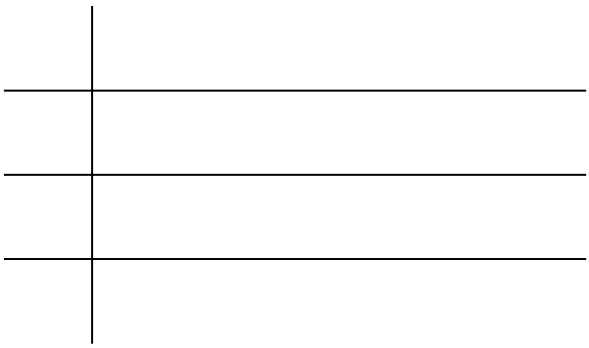
Q13

(Total 2 marks)

6. Here are the ages, in years, of 16 people.

36	48	18	25	36	28	45	30
38	27	41	16	36	48	28	21

(a) Draw an ordered stem and leaf diagram to show this information.
You must include a key.



Key:

(3)

(b) Find the median age.

..... years
(2)

Q6

(Total 5 marks)

1 There are a total of 96 children in Years 4, 5 and 6
37 of these children cannot swim.

11 children in Year 4 cannot swim.
21 children in Year 5 can swim.

There are 30 children in Year 6
18 of these 30 children can swim.

(i) Work out the number of children in Year 4 who can swim.

.....

(ii) Work out the total number of children in Year 5

.....

(Total for Question 1 is 4 marks)

4 There are 25 students in a class.
12 of the students are girls.

Here are the heights, in cm, of the 12 girls.

160 173 148 154 152 164 179 164 162 174 168 170

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

14	
15	
16	
17	

(3)

There are 13 boys in the class.

Here are the heights, in cm, of the 13 boys.

157 159 162 166 168 169 170 173 174 176 176 181 184

* (b) Compare the heights of the boys with the heights of the girls.

(3)

(Total for Question 4 is 6 marks)

4. Jim did a survey on the lengths of caterpillars he found on a field trip.

Information about the lengths is given in the stem and leaf diagram.

1	3 5 7 7
2	0 6 8 8 8 9
3	1 5 5 5 5 6 8 9
4	1 5
5	2

Key: 5|2 means 5.2 cm

Work out the median.

..... cm

(Total 2 marks)

Q4

15. A garage sells used cars.
The table shows the number of used cars it sold from July to December.

July	August	September	October	November	December
28	25	34	46	28	40

(a) Work out the 3-point moving averages for the information in the table.
The first two have been worked out for you.

29 35
....

(2)

(b) Comment on the trend shown by the 3-point moving averages.

.....

.....

(1)

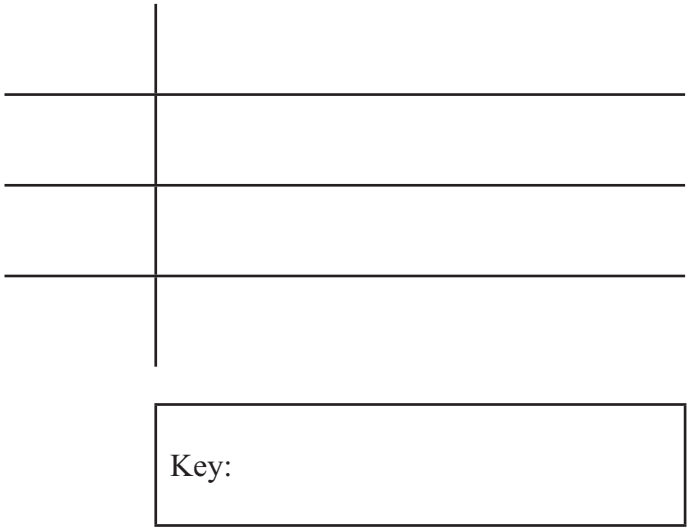
Q15

(Total 3 marks)

5 Here are the heights, in cm, of 20 sunflower plants.

73	84	78	96	98	84	101	93	71	104
81	92	95	103	100	96	87	91	88	96

(a) Draw an ordered stem and leaf diagram for these heights.



Key:

(3)

(b) Find the median height.

..... cm

(1)

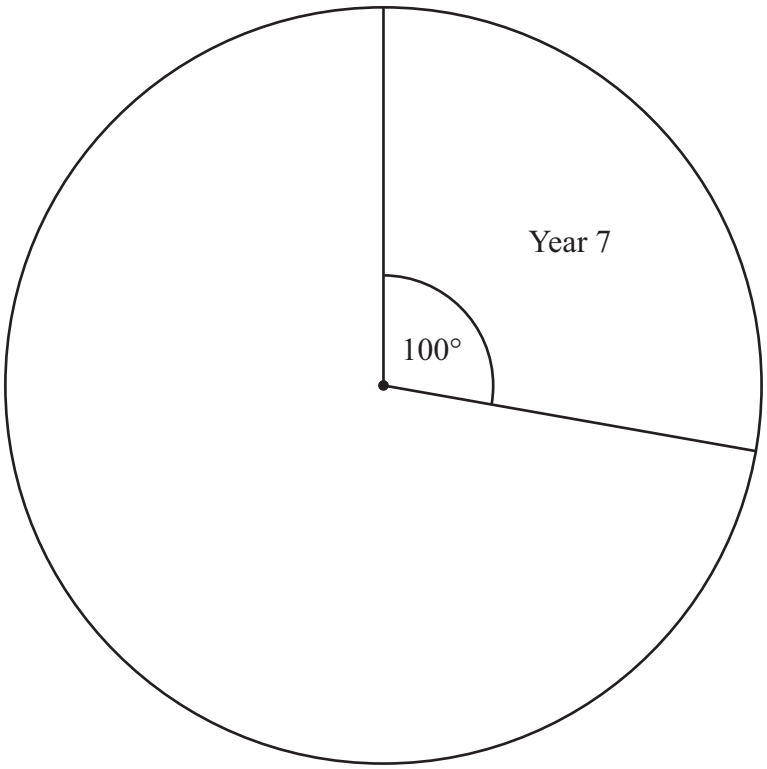
(Total for Question 5 is 4 marks)

7 Each year group in a school raised money for charity.

The incomplete table and pie chart show some information about this.

Complete the table.

Year Group	Amount raised
7	.....
8	£225
9	.....
10	£125
11	£162.50
	£900



(Total for Question 7 is 3 marks)

11 Raul is the manager of a restaurant.

He wants to find out how often local people eat in a restaurant.

Raul is going to carry out a survey using a questionnaire.

(a) Design a suitable question for Raul to use on his questionnaire.

(2)

(b) The two-way table shows information about the ages of the customers in Raul's restaurant one evening.

	Age (years)				Total
	0–16	**17–30**	**31–60**	**over 60**	
Male	8	10	17	20	55
Female	7	9	22	34	72
Total	15	19	39	54	127

Raul carries out his survey using only these customers.
He uses a sample of 50 of these customers stratified by gender and by age.

Calculate the number of males aged 17–30 in his sample.

.....

(2)

Raul's survey is biased.

(c) Give **two** possible reasons why.

1 .....

.....

.....

2 .....

.....

.....

(2)

(Total for Question 11 is 6 marks)

1 Sam wants to find out the types of film people like best.

He is going to ask whether they like comedy films or action films or science fiction films or musicals best.

(a) Design a suitable table for a data collection sheet he could use to collect this information.

(2)

Sam collects his data by asking 10 students in his class at school.
This might **not** be a good way to find out the types of film people like best.

(b) Give **one** reason why.

.....

.....

(1)

(Total for Question 1 is 3 marks)

4 Here are the speeds, in miles per hour, of 16 cars.

31	52	43	49	36	35	33	29
54	43	44	46	42	39	55	48

Draw an ordered stem and leaf diagram for these speeds.

(Total for Question 4 is 3 marks)

Question 24

5 Jamal plays 15 games of ten-pin bowling.

Here are his scores.

72	59	75	66	79
75	66	63	89	76
65	79	77	71	83

(a) Draw an ordered stem and leaf diagram to show Jamal's scores.

(3)

Gill plays 15 games of ten-pin bowling.

The table gives some information about her scores.

Highest score	95
Lowest score	75
Mean score	80

*(b) Compare the distribution of Jamal's scores and the distribution of Gill's scores.

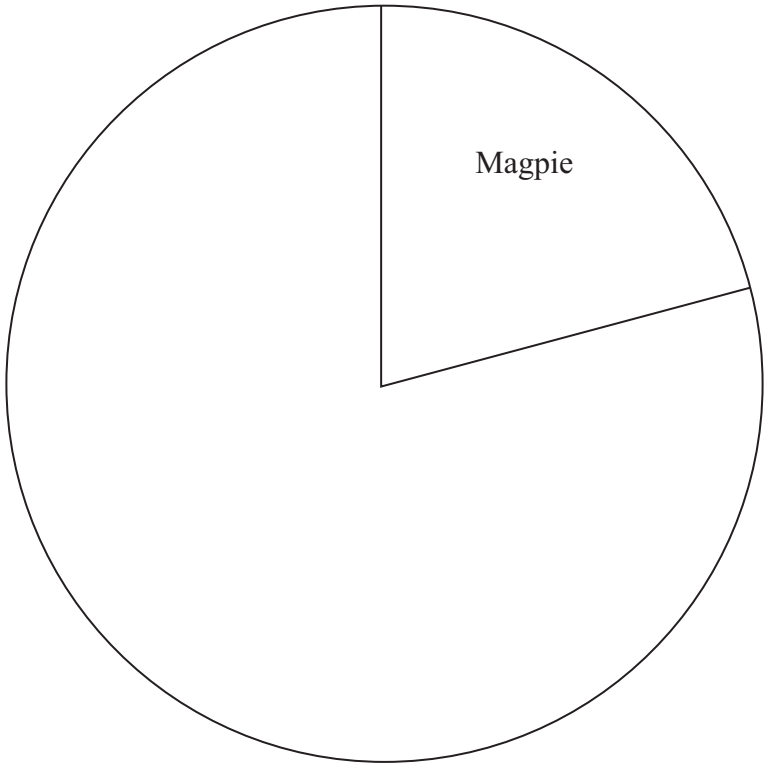
(5)

(Total for Question 5 is 8 marks)

4 The table gives some information about the birds Paula sees in her garden one day.

Bird	Frequency
Magpie	15
Thrush	10
Starling	20
Sparrow	27

Complete the accurate pie chart.



(Total for Question 4 is 3 marks)

9 The stem and leaf diagram gives information about the numbers of tomatoes on 31 tomato plants.

0	8	8	9				
1	1	1	5	5			
2	1	2	2	6	7	8	8
3	0	2	5	5	7	9	
4	2	2	3	5	8	8	
5	1	1	3	4	7		

Key: 5 | 7 = 57 tomatoes

(a) Work out the median.

.....

(1)

(b) Work out the interquartile range.

.....

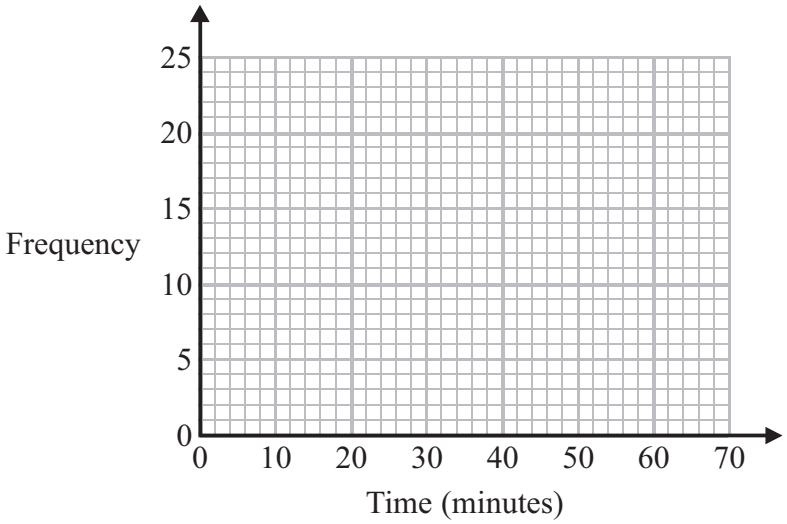
(2)

(Total for Question 9 is 3 marks)

12 The frequency table gives information about the times it took some office workers to get to the office one day.

Time (t minutes)	Frequency
$0 < t \leqslant 10$	4
$10 < t \leqslant 20$	8
$20 < t \leqslant 30$	14
$30 < t \leqslant 40$	16
$40 < t \leqslant 50$	6
$50 < t \leqslant 60$	2

(a) Draw a frequency polygon for this information.



(2)

(b) Write down the modal class interval.

.....

(1)

One of the office workers is chosen at random.

(c) Work out the probability that this office worker took more than 40 minutes to get to the office.

.....

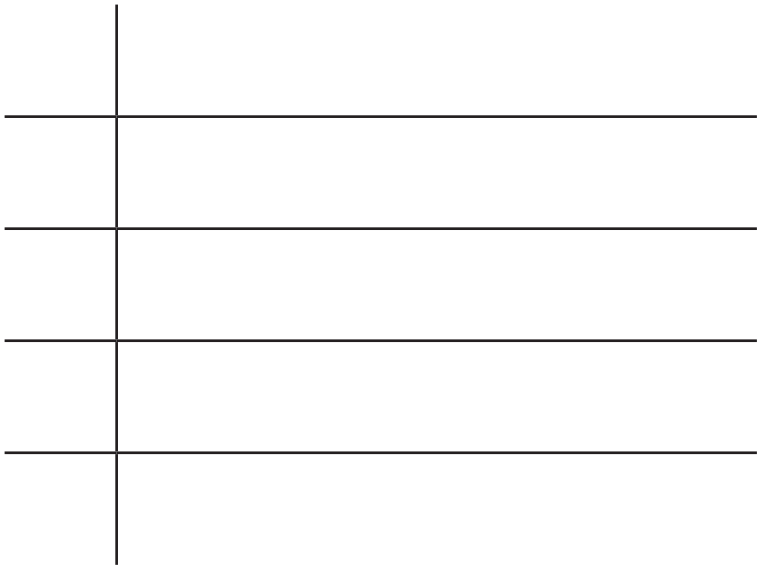
(2)

(Total for Question 12 is 5 marks)

1 The list below shows the weight, in grams, of 15 baskets of strawberries.

193	200	207	211	198
189	218	195	206	189
223	190	207	205	212

Show this information in an ordered stem and leaf diagram.
You must include a key.

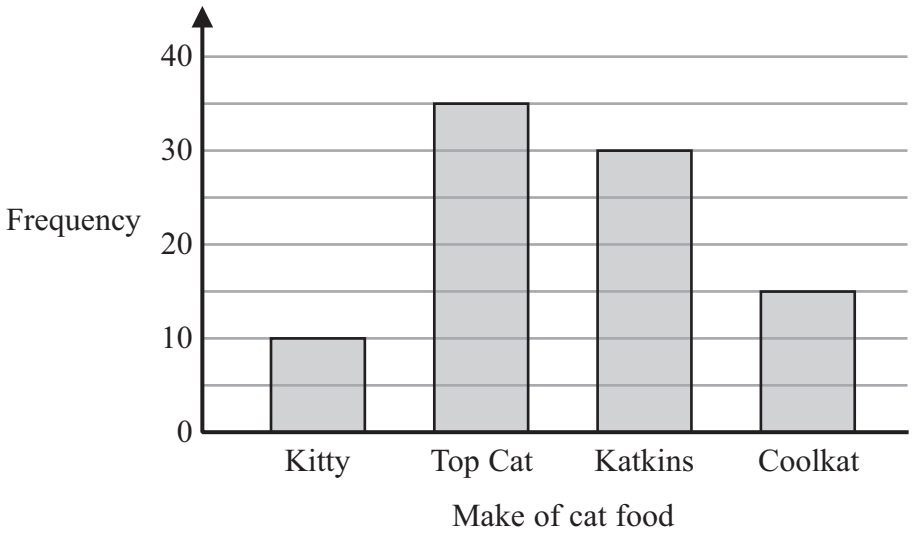


Key:

(Total for Question 1 is 3 marks)

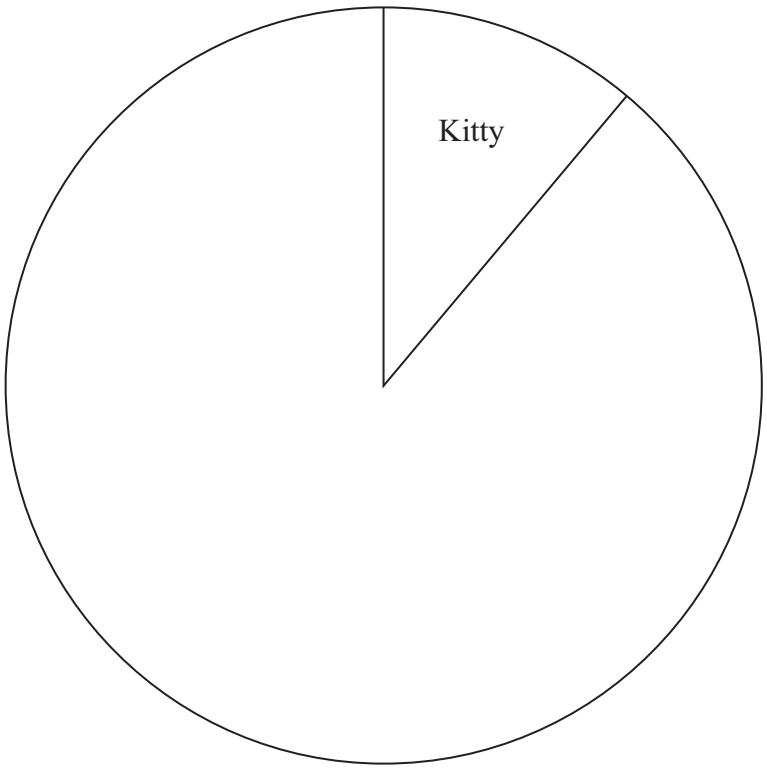
4 A survey was carried out for a magazine.
90 cat owners were asked to write down the make of cat food their cats liked best.

The bar chart shows information about the results.



The information in the bar chart is going to be shown in a pie chart.

Use the information in the bar chart to complete the pie chart.



(Total for Question 4 is 3 marks)

6 There are 200 students at a college.
Each student studies one of Art, Graphics or Textiles.

Of the 116 female students, 26 study Graphics.
22 male students study Textiles.
A total of 130 students study Art.

The number of students who study Graphics is the same as the number of students who study Textiles.

Work out how many **male** students study Art.

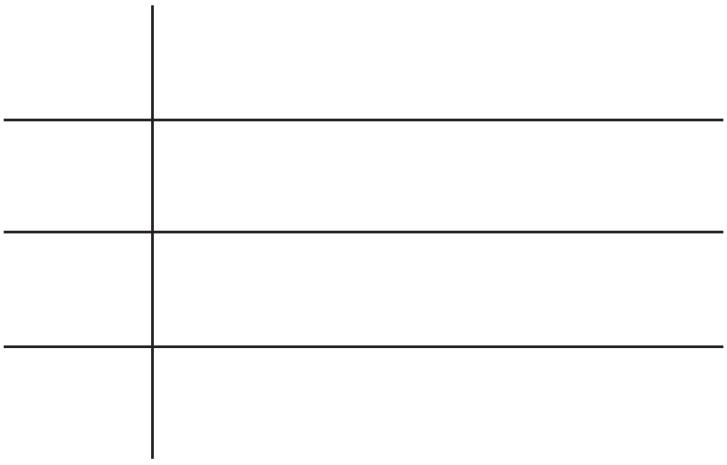
.....

(Total for Question 6 is 4 marks)

1 Here are the ages, in years, of 15 students.

19	18	20	25	37
33	21	17	29	20
42	18	23	37	22

Show this information in an ordered stem and leaf diagram.



Key:

(Total for Question 1 is 3 marks)

4 There are 40 children in a ski club.
Each child has one pair of skis.

The skis are

twin tipped skis
or downhill skis
or slalom skis.

There are 23 boys in the ski club.
7 of the boys have twin tipped skis.
8 of the girls have downhill skis.
5 of the 9 children with slalom skis are girls.

Work out the number of children with twin tipped skis.

.....

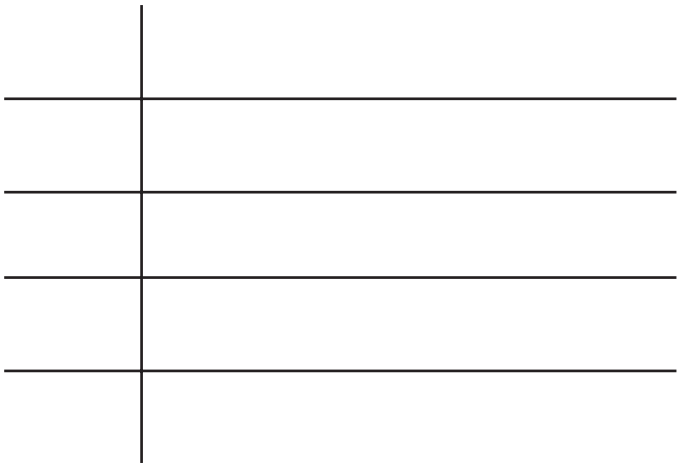
(Total for Question 4 is 4 marks)

6 Here are the lengths, in cm, of 18 different model boats.

47	58	64	27	42	58	29	34	56
66	53	26	30	63	47	57	42	44

Draw an ordered stem and leaf diagram to show this information.

You must include a key.



Key:

(Total for Question 6 is 3 marks)

3 Sixteen babies are born in a hospital.

Here are the weights of the babies in kilograms.

2.4	2.7	3.5	4.4	4.5	4.1	4.4	2.8
4.1	3.8	3.8	4.2	3.3	3.0	3.7	3.3

Show this information in an ordered stem and leaf diagram.



Key:

(Total for Question 3 is 3 marks)

2 Here are the heights, in cm, of some potato plants.

20	35	48	37	25	56	65	42
34	28	25	32	54	62	39	45

Draw an ordered stem and leaf diagram to show this information.

2	
3	
4	
5	
6	

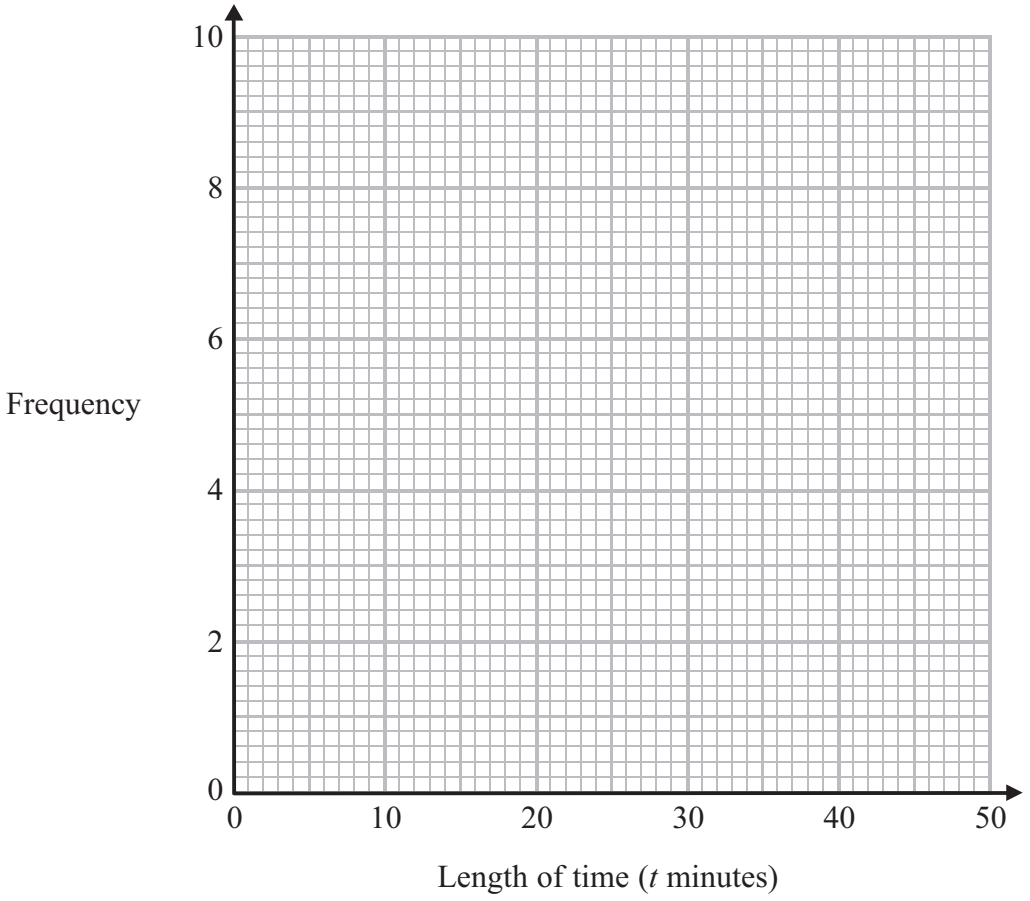
(Total for Question 2 is 3 marks)

5 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 5 is 2 marks)

8 On an activity day students play one sport.

They play football or hockey or tennis.

120 students are on the activity day.

30 of the students are boys.

12 of the boys and 26 of the girls play hockey.

45 of the students play football.
35 of the 45 students who play football are girls.

Work out the number of girls who play tennis.

.....

(Total for Question 8 is 4 marks)

6 There are 130 adults at a language school.
Each adult studies one of French or Spanish or German.

96 of the adults are women.
12 of the women study French.
73 of the adults study Spanish.
55 of the women study Spanish.
9 of the men study German.

How many of the adults study French?

.....

(Total for Question 6 is 4 marks)

14 The table gives information about the temperature, T °C, at noon in a town for 50 days.

Temperature (T °C)	Frequency
$8 < T \leqslant 12$	6
$12 < T \leqslant 16$	8
$16 < T \leqslant 20$	13
$20 < T \leqslant 24$	21
$24 < T \leqslant 28$	2

(a) Write down the modal class interval.

.....

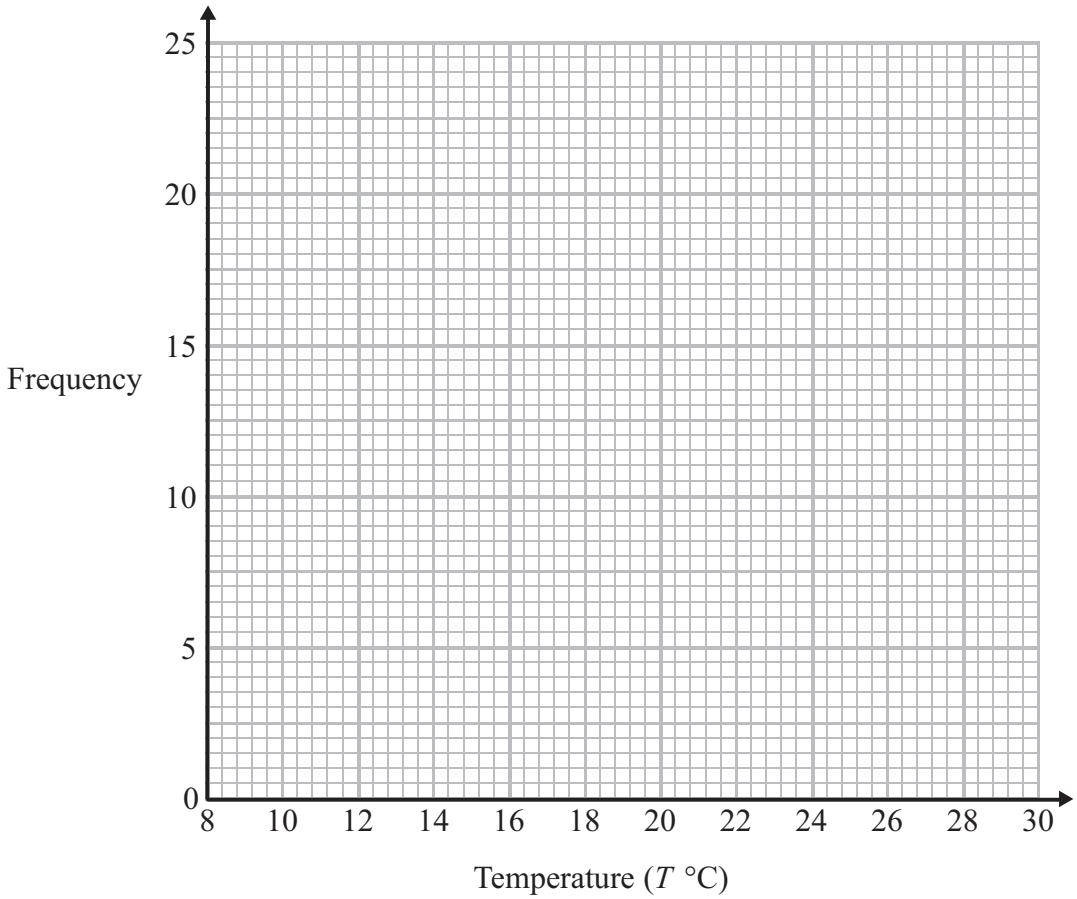
(1)

(b) Calculate an estimate for the mean temperature.

..... °C

(4)

(c) Draw a frequency polygon for the information in the table.



(2)

(Total for Question 14 is 7 marks)

3 Here are the heights, in cm, of 15 students.

150	163	158	156	149
165	161	171	170	166
174	154	148	167	152

(a) Draw an ordered stem and leaf diagram for these heights.
You must include a key.



Key:

(3)

(b) Work out the interquartile range.

..... cm

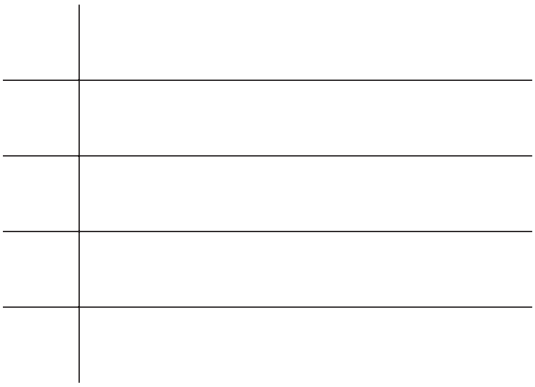
(2)

(Total for Question 3 is 5 marks)

2 Here are the times, in minutes, that 20 children took to walk to school.

13	21	19	27	31	5	23	29	18	25
34	15	28	23	22	40	16	19	32	9

Draw an ordered stem and leaf diagram for these times.



Key:

(Total for Question 2 is 3 marks)

3 50 people each did one activity at a sports centre.

Some of the people went swimming.
Some of the people played squash.
The rest of the people used the gym.

21 of the people were female.
6 of the 8 people who played squash were male.
18 of the people used the gym.
9 males went swimming.

Work out the number of females who used the gym.

.....

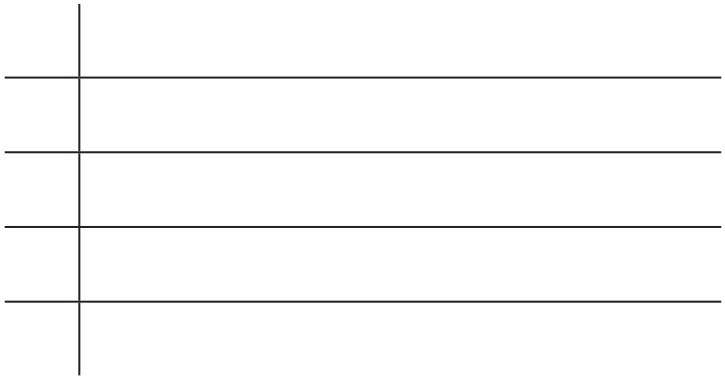
(Total for Question 3 is 4 marks)

7 A leisure centre has a swimming pool and a gym.

Here are the ages of the 16 people in the swimming pool.

54	43	15	16	42	23	20	18
36	32	45	10	14	45	13	46

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



(3)

There are 15 people in the gym.

Here are the ages of the 15 people.

18	19	20	21	27	29	32	34
35	36	39	39	42	44	45	

*(b) Compare the ages of the people in the swimming pool with the ages of the people in the gym.

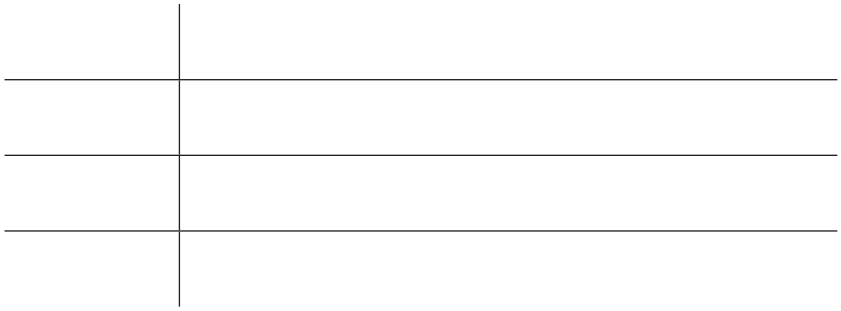
(3)

(Total for Question 7 is 6 marks)

3 Here are the heights, in cm, of 18 children.

98	90	84	102	115	91
88	91	108	110	97	93
90	89	103	95	92	106

Show this information in an ordered stem and leaf diagram.

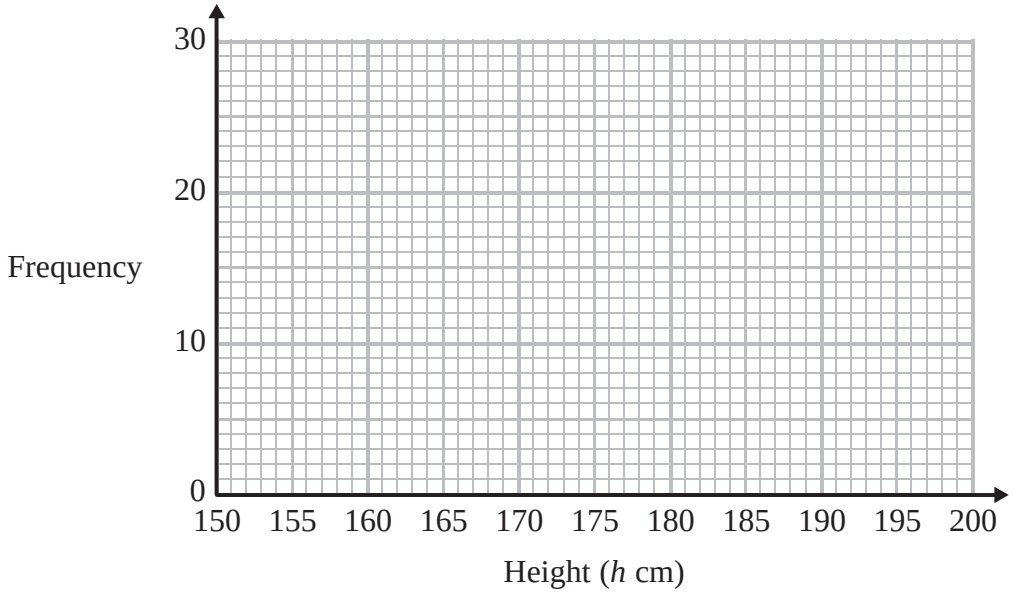


(Total for Question 3 is 3 marks)

8 The frequency table gives information about the heights of some people.

Height (h cm)	Frequency
$160 < h \leqslant 165$	2
$165 < h \leqslant 170$	5
$170 < h \leqslant 175$	10
$175 < h \leqslant 180$	21
$180 < h \leqslant 185$	16
$185 < h \leqslant 190$	4

Draw a frequency polygon for this information.

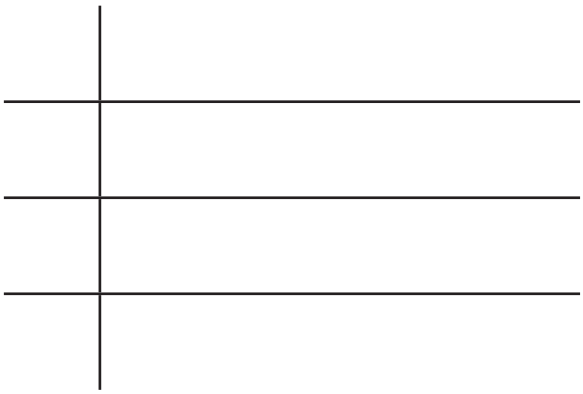


(Total for Question 8 is 2 marks)

1 Here are the heights, in centimetres, of 15 children.

123	147	135	150	147
129	148	149	125	137
133	138	133	130	151

Show this information in an ordered stem and leaf diagram.

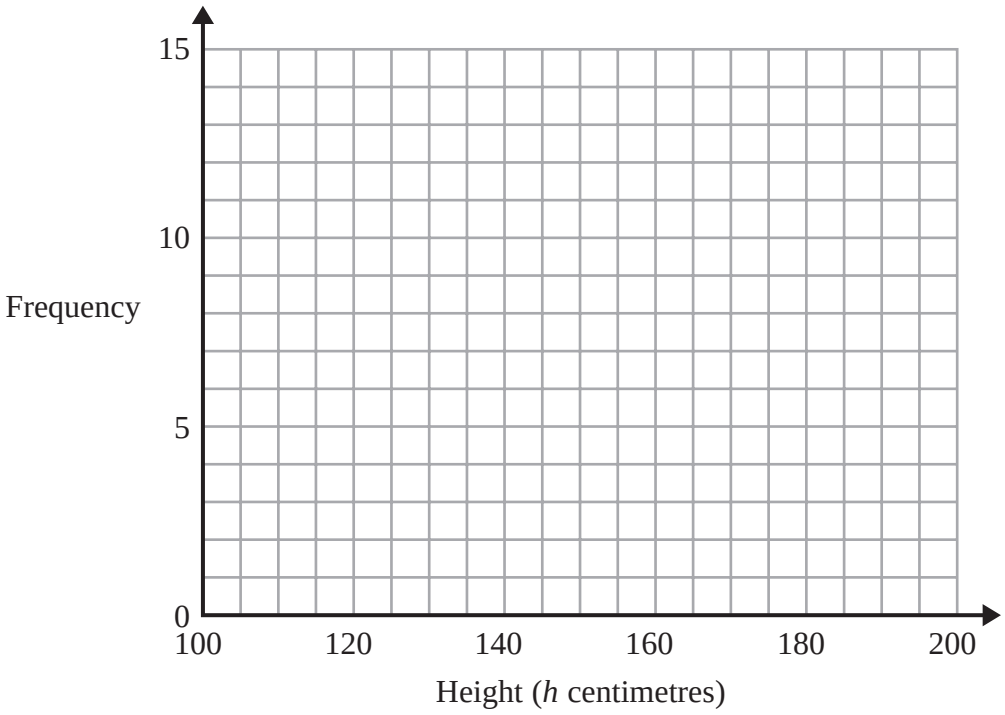


(Total for Question 1 is 3 marks)

4 The table shows information about the heights, in centimetres, of 30 sunflower plants.

Height (h centimetres)	**Frequency**
$100 < h \leqslant 120$	2
$120 < h \leqslant 140$	6
$140 < h \leqslant 160$	7
$160 < h \leqslant 180$	12
$180 < h \leqslant 200$	3

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



(2)

(b) Write down the modal class interval.

.....

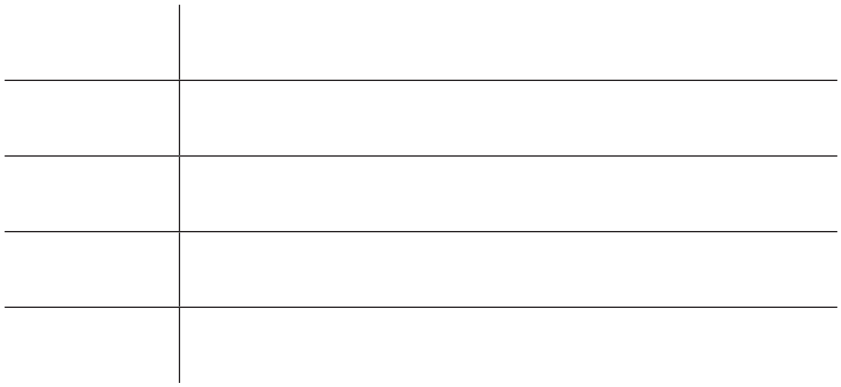
(1)

(Total for Question 4 is 3 marks)

1 Here are the heights in centimetres of 20 men.

165	164	176	179	188	178	183	172	180	190
167	159	156	176	173	168	169	182	167	192

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



(3)

(b) Work out the percentage of these men with a height greater than 184 cm.

..... %

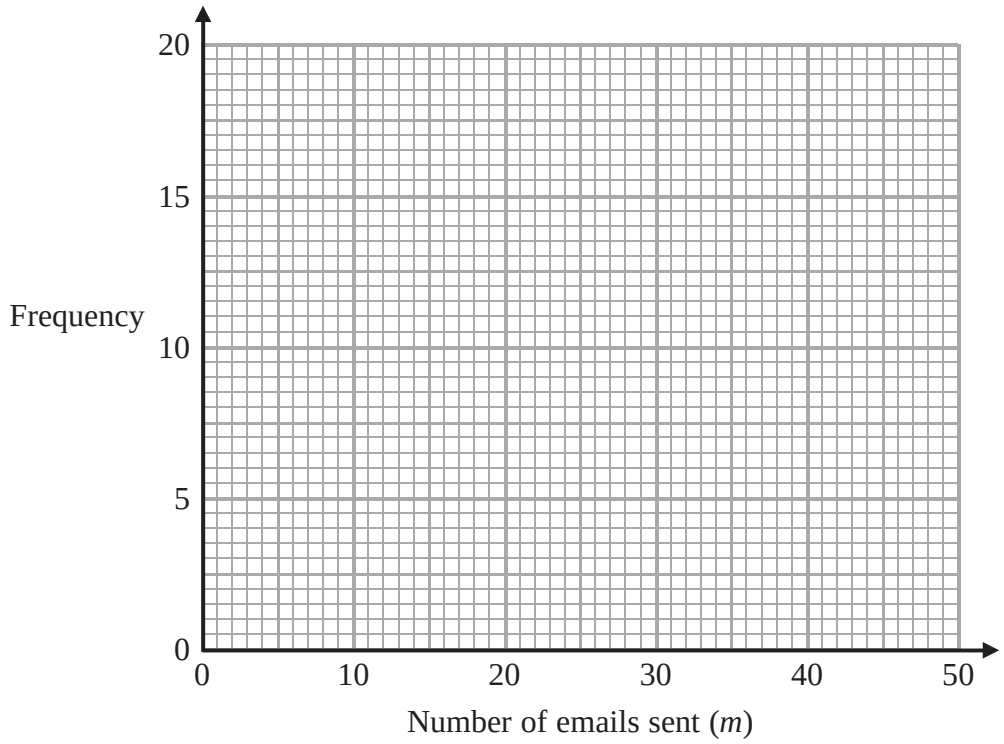
(2)

(Total for Question 1 is 5 marks)

9 The frequency table gives information about the numbers of emails sent by 51 teachers on Monday.

Number of emails sent (m)	Frequency
$0 < m \leqslant 10$	5
$10 < m \leqslant 20$	17
$20 < m \leqslant 30$	14
$30 < m \leqslant 40$	9
$40 < m \leqslant 50$	6

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



(2)

*(b) Nalini says that at least a quarter of these teachers sent more than 30 emails.

Is Nalini correct?
You must explain your answer.

(2)

(Total for Question 9 is 4 marks)

6 Stephen plays in a basketball team.

The list shows the numbers of points Stephen scored in 15 games of basketball this year.

26 14 33 8 21 18 20 9 17 22 21 18 22 30 25

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



(3)

Last year the ratio of the number of games Stephen's team won to the number of games Stephen's team did **not** win was 5 : 4

Last year Stephen's team played 36 games.

(b) Work out the number of games Stephen's team won last year.

.....

(2)

(Total for Question 6 is 5 marks)

8 Milk is sold in $\frac{1}{2}$ pint bottles, in 1 pint bottles and in 2 pint bottles.

One weekend a shop sold 100 bottles of milk.

46 of the bottles were sold on Sunday.
15 of the bottles sold on Sunday were 2 pint bottles.

31 of the bottles sold on Saturday were $\frac{1}{2}$ pint bottles.

22 of the bottles sold were 2 pint bottles.
30 of the bottles sold were 1 pint bottles.

How many 1 pint bottles were sold on Sunday?

.....

(Total for Question 8 is 4 marks)

1 Here are the lengths, in cm, of 15 tables.

28	51	42	23	63
38	44	29	32	37
61	35	39	41	25

Draw an ordered stem and leaf diagram for these lengths.

(Total for Question 1 is 3 marks)

3 People can buy three types of plane tickets.

They can buy

an Economy ticket
a Premium ticket
or a Business ticket

200 people buy plane tickets.

92 males buy tickets
30 of the males buy Business tickets
62 females buy Economy tickets

A total of 44 people buy Business tickets.
A total of 60 people buy Premium tickets.

How many males buy Premium tickets?
You must show all your working.

.....

(Total for Question 3 is 4 marks)

11 66 people went on a day trip.
Each person did only one activity on the trip.

Each person went skating or went to an art gallery or went bowling.

43 of the people are female.
4 of the 10 people who went skating are male.
20 of the people went to the art gallery.
10 males went bowling.

Work out the number of females who went to the art gallery.

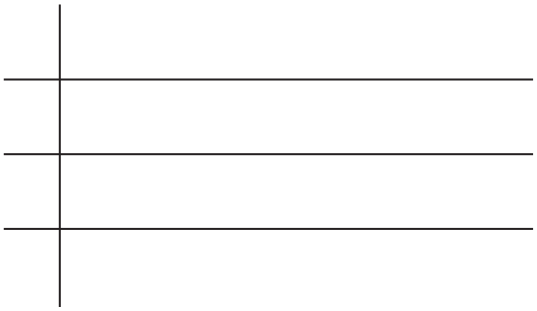
.....

(Total for Question 11 is 4 marks)

1 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

.....

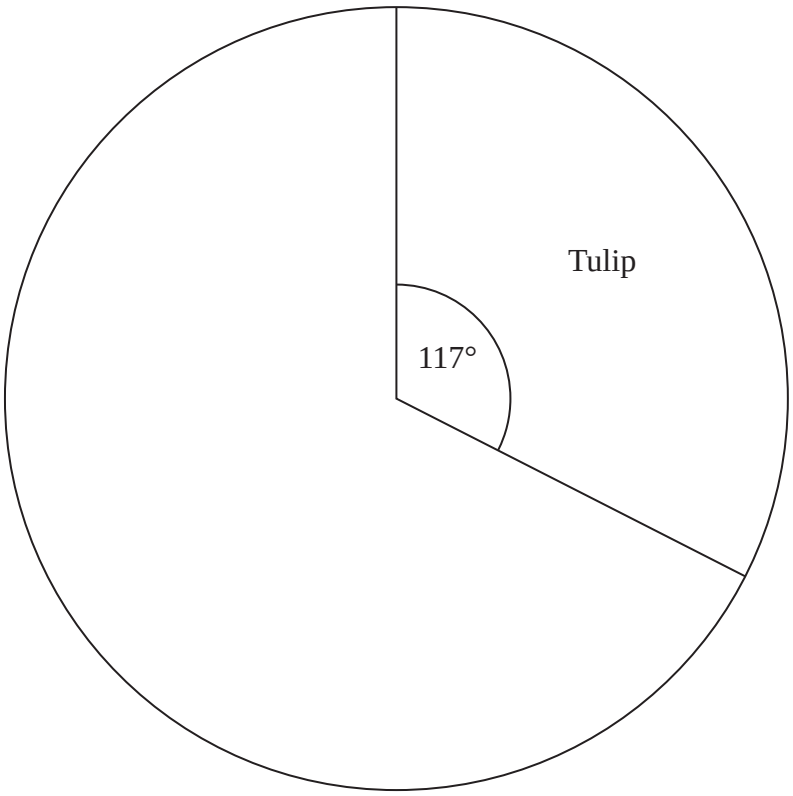
(2)

(Total for Question 1 is 5 marks)

6 Linda planted 400 flower bulbs.
She planted daffodil bulbs, tulip bulbs and hyacinth bulbs.

The incomplete table and pie chart show some information about the bulbs.

Type of bulb	Number planted
Daffodil	180
Tulip	.....
Hyacinth	.....
Total	400



Complete the table and the pie chart.

(Total for Question 6 is 4 marks)

6 The table shows some information about the ages of 60 teachers.

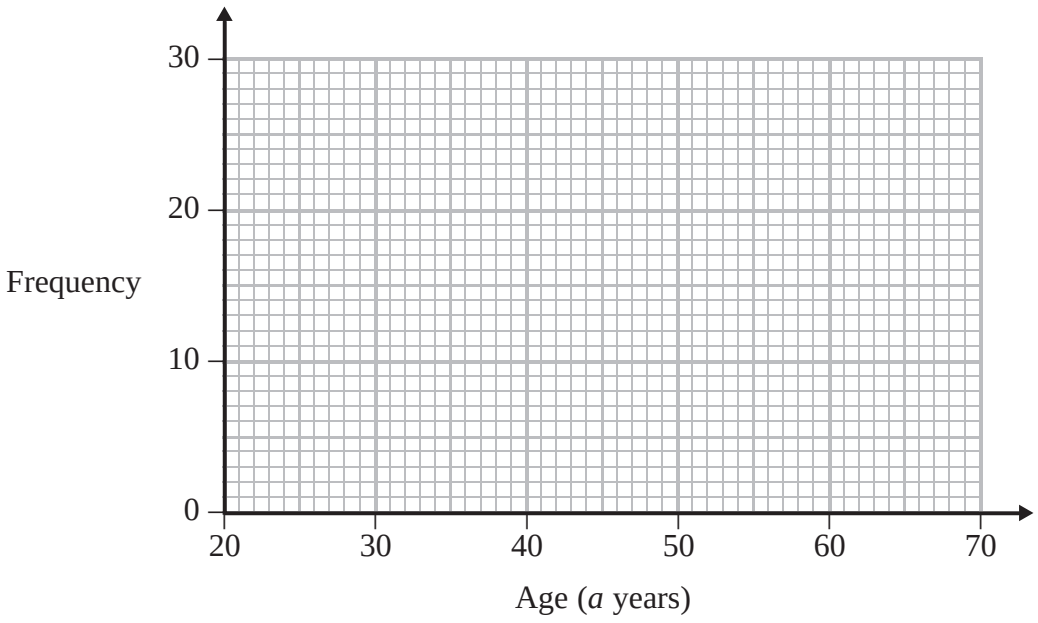
Age (a years)	Frequency
$20 < a \leqslant 30$	6
$30 < a \leqslant 40$	16
$40 < a \leqslant 50$	14
$50 < a \leqslant 60$	22
$60 < a \leqslant 70$	2

(a) Write down the modal class interval.

.....

(1)

(b) Draw a frequency polygon for the information in the table.



(2)

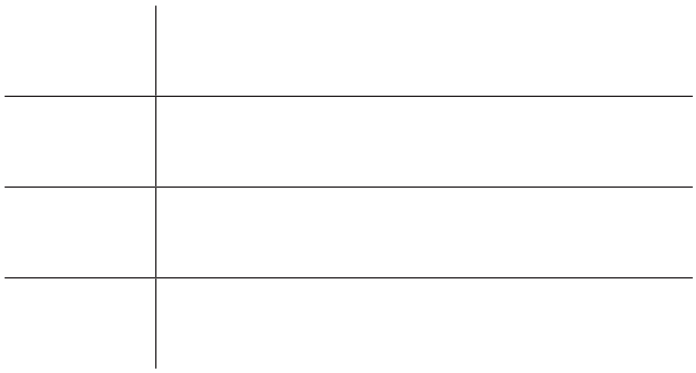
(Total for Question 6 is 3 marks)

Question 58

1 Here are the heights, in mm, of 20 plants.

53	44	48	56	48	64	51	33	41	44
31	52	55	63	60	56	47	61	37	56

Draw an ordered stem and leaf diagram for these heights.



Key:

(Total for Question 1 is 3 marks)

17 Pierre is going to carry out a survey using a questionnaire.
He wants to find out how often people play sport.

(a) Design a suitable question for Pierre to use on his questionnaire.

(2)

The two-way table gives information about the gender and the ages of the people who live in a small town.

	Age (years)			Total
	0–18	**19–60**	**over 60**	
Male	248	503	171	922
Female	198	460	129	787
Total	446	963	300	1709

Pierre gives his questionnaire to a sample of these people.
He uses a sample of 200 of these people stratified by gender and by age.

(b) Calculate the number of females aged 19–60 in the sample.

.....

(2)

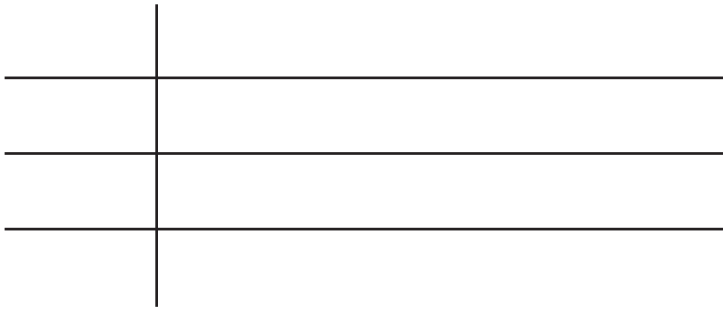
(Total for Question 17 is 4 marks)

1 Jeremy catches 19 fish.

Here are the weights, in grams, of the fish.

50	61	57	47	53	75	62	48	64	73
78	51	66	58	66	48	55	69	50	

Draw an ordered stem and leaf diagram for these weights.



Key:

(Total for Question 1 is 3 marks)

8 99 children each buy one drink.
They each buy cola or juice or water.

45 of these children are girls.
25 boys buy cola.
16 girls buy juice.
17 of the 37 children who buy water are boys.

Work out the number of children who buy cola.

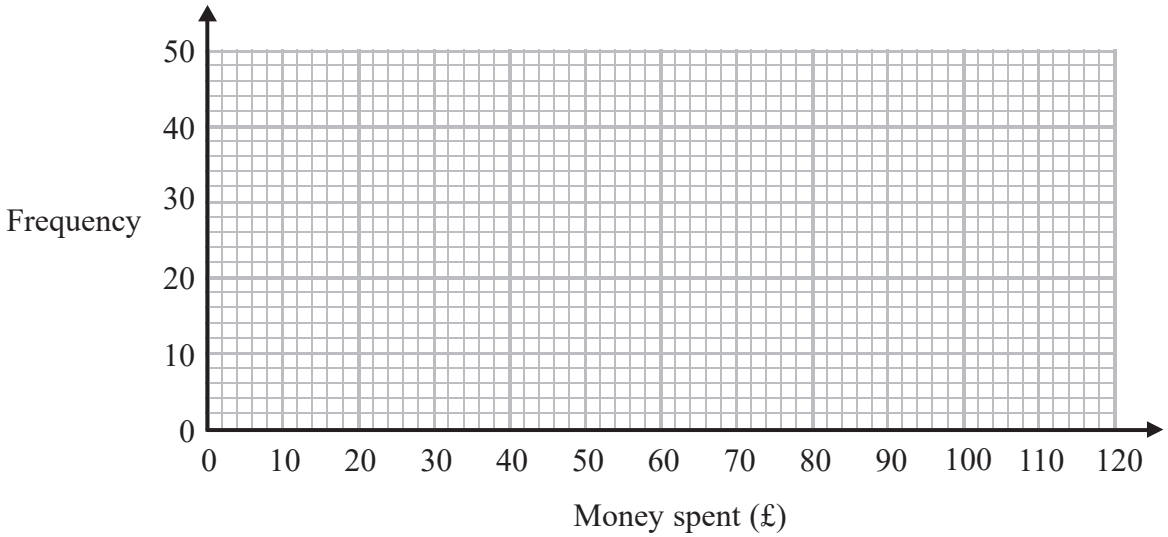
.....

(Total for Question 8 is 4 marks)

3 The table gives information about the money, £A, some people spent on an internet site one day.

Money spent (£A)	Frequency
$0 < A \leqslant 20$	10
$20 < A \leqslant 40$	15
$40 < A \leqslant 60$	25
$60 < A \leqslant 80$	40
$80 < A \leqslant 100$	6

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



(2)

(b) Write down the modal class interval.

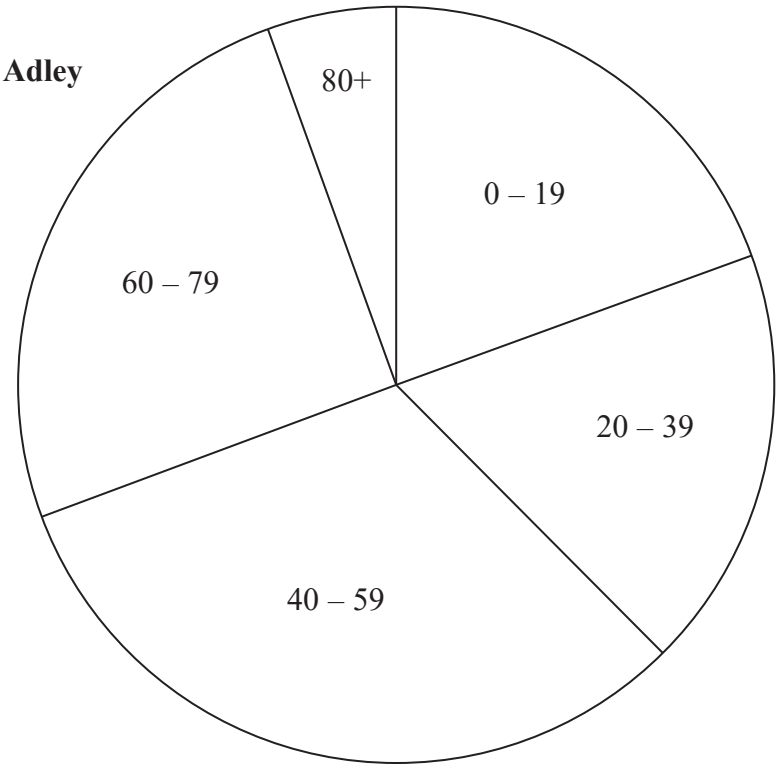
.....

(1)

(Total for Question 3 is 3 marks)

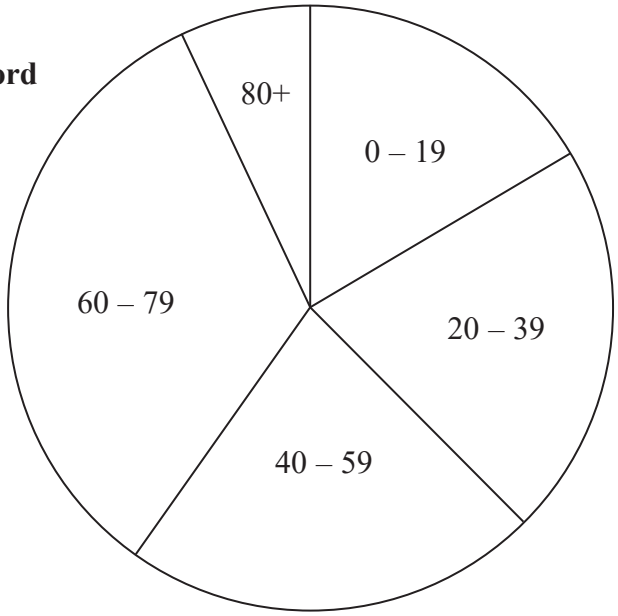
11 The pie charts give information about the ages, in years, of people living in two towns, Adley and Bridford.

Adley



Diagrams accurately drawn

Bridford



The ratio of the number of people living in Adley to the number of people living in Bridford is given by the ratio of the areas of the pie charts.

What proportion of the total number of people living in these two towns live in Adley **and** are aged 0 – 19?
Give your answer correct to 3 significant figures.

.....

(Total for Question 11 is 3 marks)

1 The table shows information about the heights of 80 children.

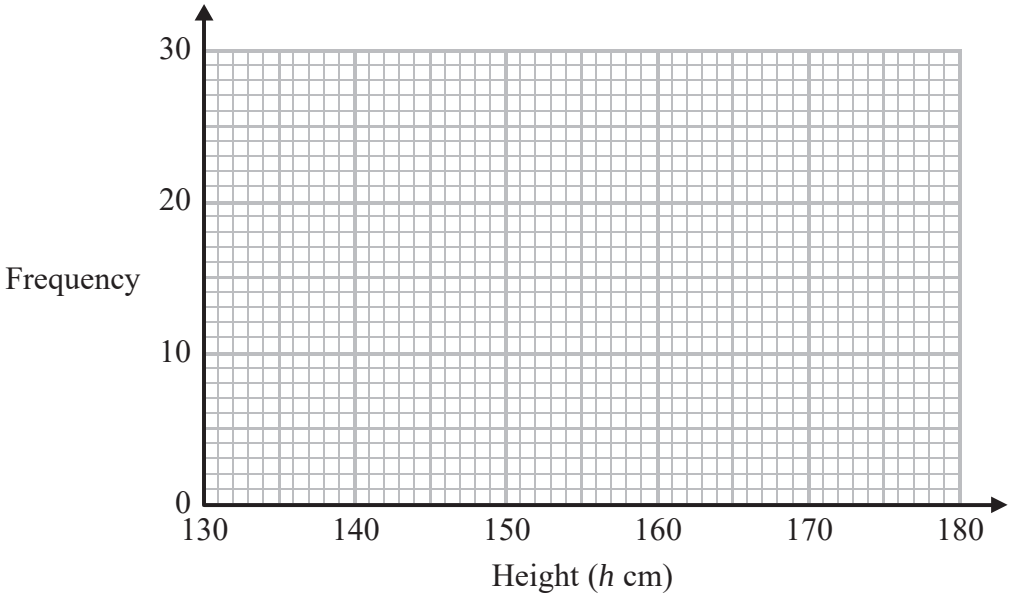
Height (h cm)	Frequency
$130 < h \leqslant 140$	4
$140 < h \leqslant 150$	11
$150 < h \leqslant 160$	24
$160 < h \leqslant 170$	22
$170 < h \leqslant 180$	19

(a) Find the class interval that contains the median.

.....

(1)

(b) Draw a frequency polygon for the information in the table.



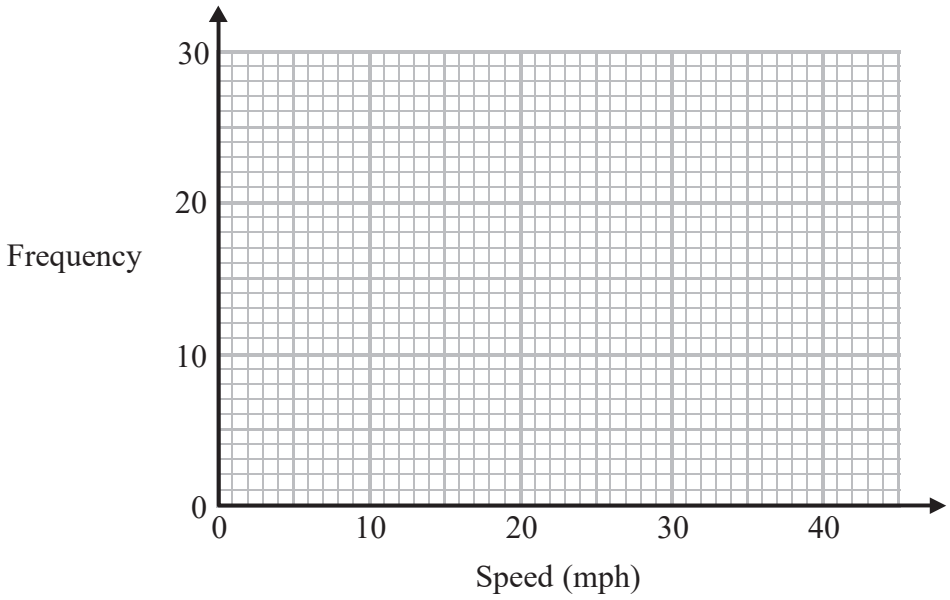
(2)

(Total for Question 1 is 3 marks)

7 The table gives information about the speeds of 70 cars.

Speed (s mph)	Frequency
$0 < s \leqslant 10$	14
$10 < s \leqslant 20$	18
$20 < s \leqslant 30$	26
$30 < s \leqslant 40$	12

Draw a frequency polygon for this information.



(Total for Question 7 is 2 marks)

3 The table shows information about the heights of 80 plants.

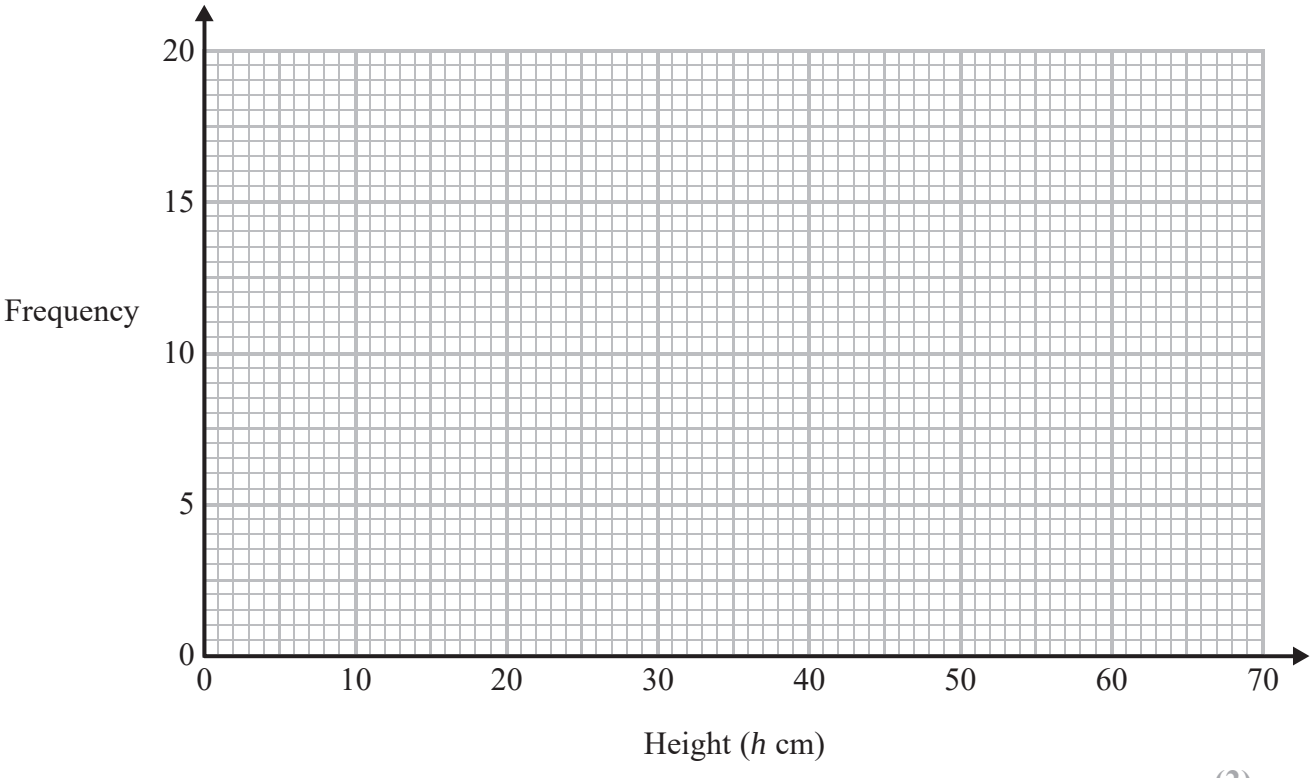
Height (h cm)	Frequency
$10 < h \leqslant 20$	7
$20 < h \leqslant 30$	13
$30 < h \leqslant 40$	14
$40 < h \leqslant 50$	12
$50 < h \leqslant 60$	16
$60 < h \leqslant 70$	18

(a) Find the class interval that contains the median.

.....

(1)

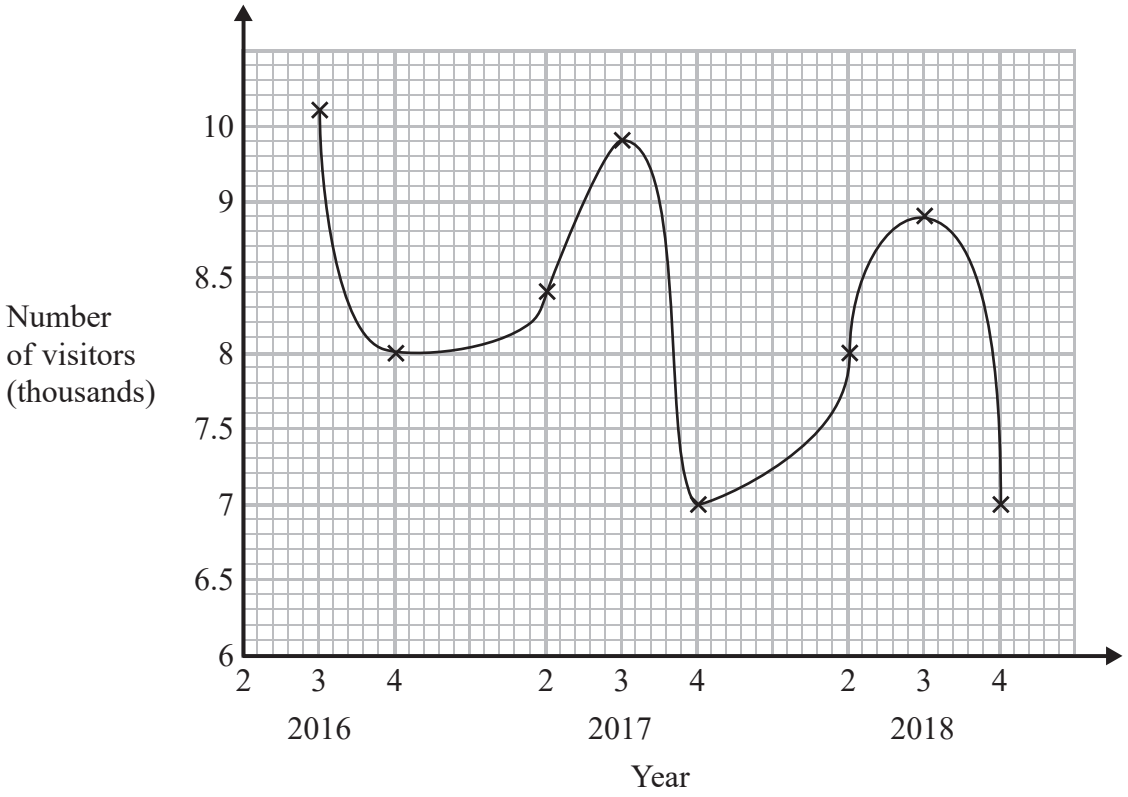
(b) On the grid, draw a frequency polygon for the information in the table.



(2)

(Total for Question 3 is 3 marks)

4 Sean has drawn a time series graph to show the numbers, in thousands, of visitors to a fun park.



Write down two things that are wrong or could be misleading with this graph.

1 .....

.....

.....

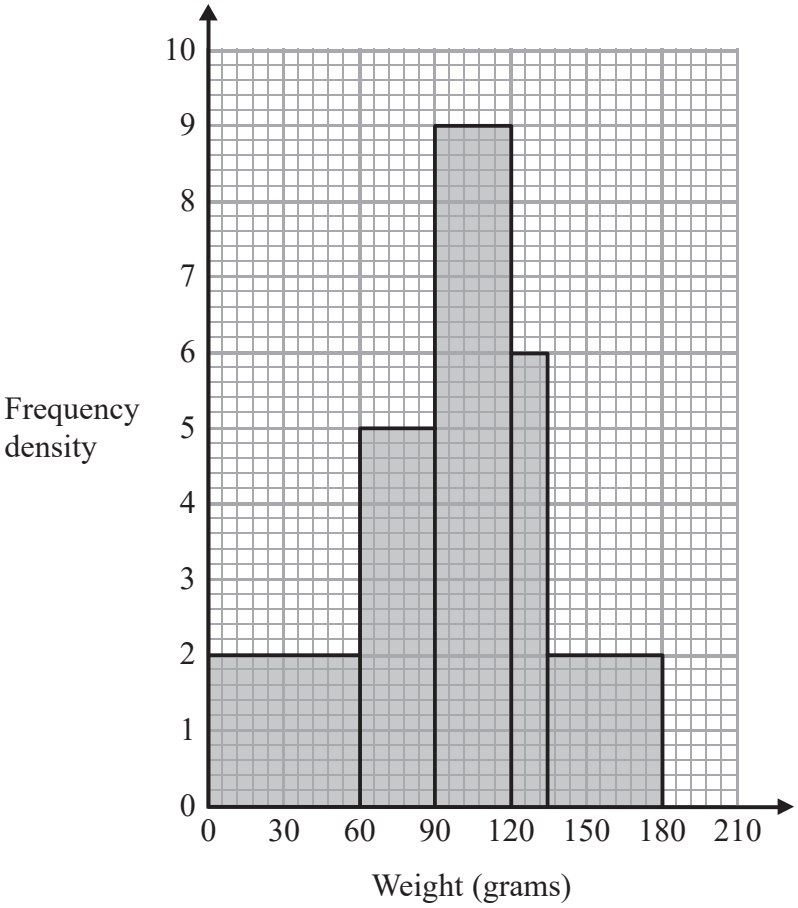
2 .....

.....

.....

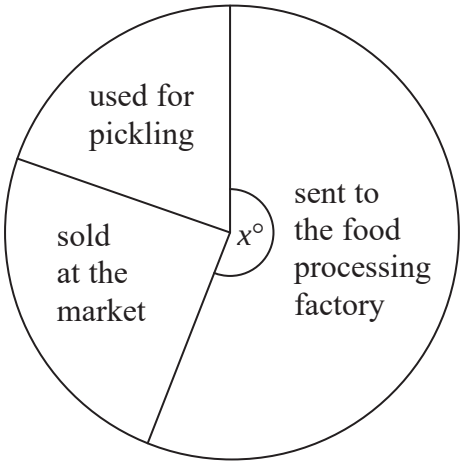
(Total for Question 4 is 2 marks)

21 The histogram gives information about the distribution of the weights of some onions grown by a farmer.



Onions less than 60 grams in weight are used for pickling.
Onions greater than 120 grams in weight are sold at the market.
The rest of the onions are sent to a food processing factory.

A pie chart is drawn using the information opposite to show what the farmer does with the onions he grows.



The angle of the sector for the onions sent to the food processing factory is $x°$.

Work out the value of x.

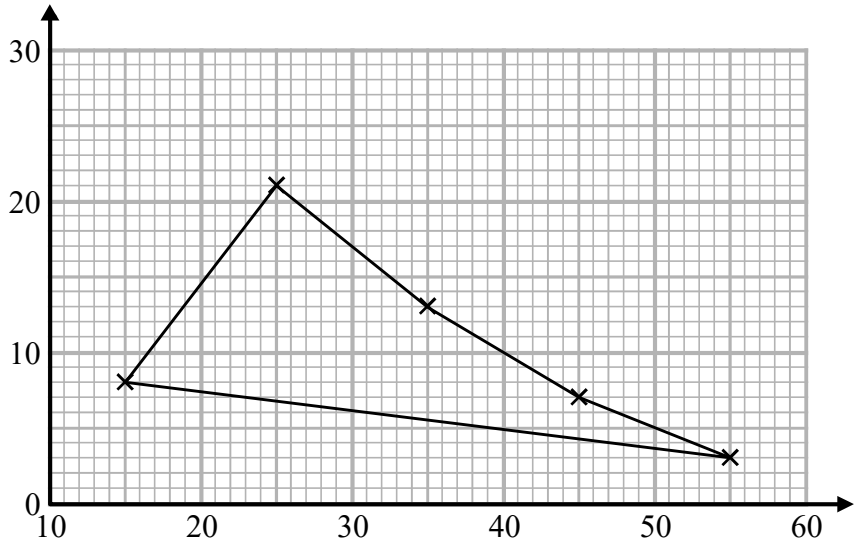
$x =$ .....

(Total for Question 21 is 4 marks)

1 The table shows some information about the weights of 50 potatoes.

Weight (w grams)	Frequency
$10 < w \leqslant 20$	6
$20 < w \leqslant 30$	21
$30 < w \leqslant 40$	13
$40 < w \leqslant 50$	7
$50 < w \leqslant 60$	3

Iveta drew this frequency polygon for the information in the table.
The frequency polygon is **not** fully correct.



Write down **two** things that are wrong with the frequency polygon.

1 .....

.....

2 .....

.....

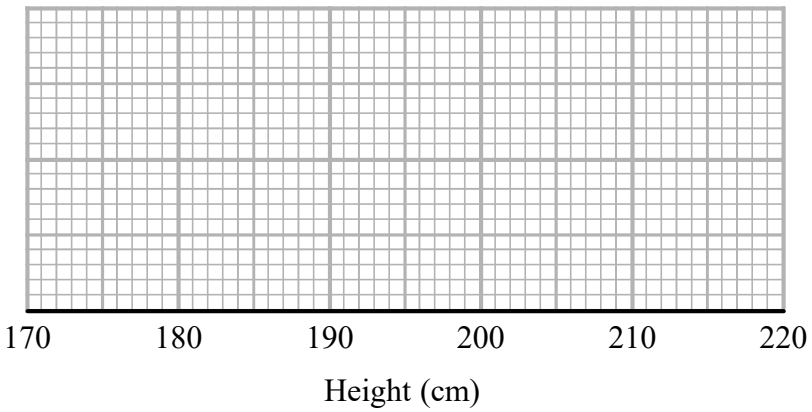
(Total for Question 1 is 2 marks)

12 The stem and leaf diagram shows information about the heights, in cm, of 23 sunflowers.

17	3	4	9				
18	6	8	8				
19	0	0	1	4	6	7	8
20	1	4	7	7	9	9	
21	4	8	8	9			

Key: 17|3 represents 173 cm

On the grid, draw a box plot for this information.



(Total for Question 12 is 3 marks)

7 The table shows information about the heights, in cm, of a group of Year 9 girls.

least height	150 cm
median	165 cm
greatest height	170 cm

This stem and leaf diagram shows information about the heights, in cm, of a group of 15 Year 9 boys.

15	8 9 9
16	4 5 7 7 8
17	0 3 4 4 7
18	0 2

Key: 15 | 8 represents 158 cm

Compare the distribution of the heights of the girls with the distribution of the heights of the boys.

.....

.....

.....

.....

.....

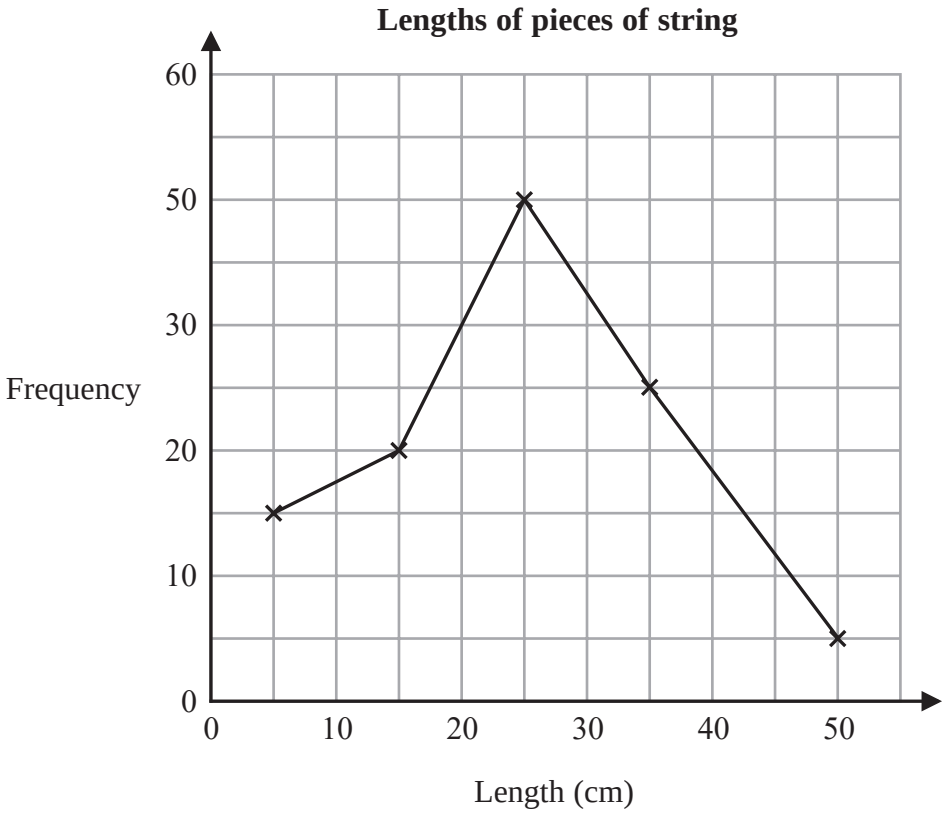
.....

(Total for Question 7 is 3 marks)

5 The table gives information about the lengths, in cm, of some pieces of string.

Length (t cm)	Frequency
$0 < t \leqslant 10$	15
$10 < t \leqslant 20$	20
$20 < t \leqslant 30$	50
$30 < t \leqslant 40$	25
$40 < t \leqslant 50$	5

Amos draws a frequency polygon for the information in the table.



Write down **two** mistakes that Amos has made.

1 .....

.....

2 .....

.....

(Total for Question 5 is 2 marks)

3 200 students chose one language to study.
Each student chose one language from French or Spanish or German.

Of the 200 students,

90 are boys and the rest of the students are girls
70 chose Spanish
60 of the 104 students who chose French are boys
18 girls chose German.

Work out how many boys chose Spanish.

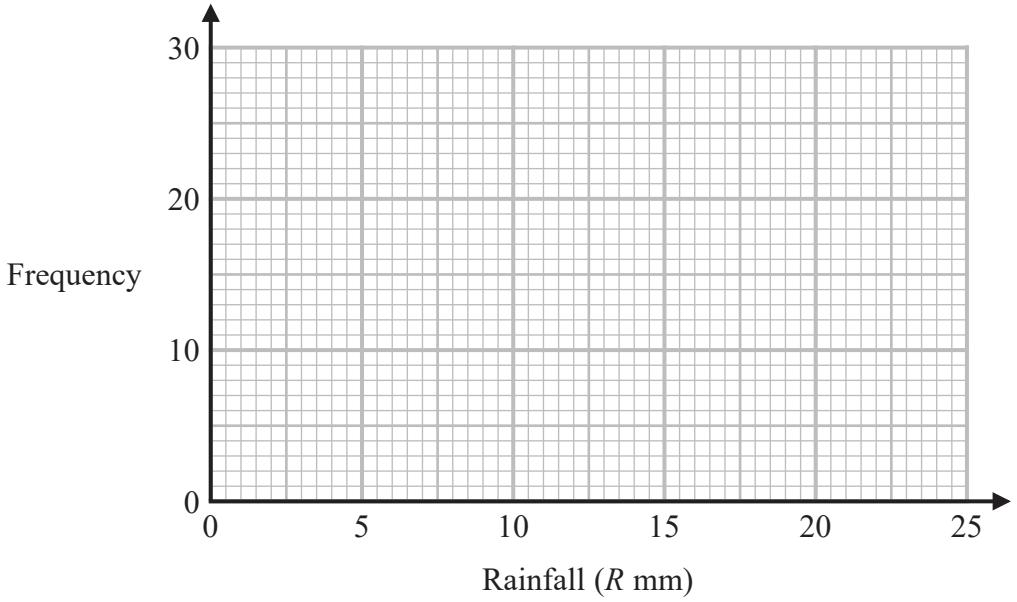
.....

(Total for Question 3 is 3 marks)

4 The table shows information about the daily rainfall in a town for 60 days.

Rainfall (R mm)	**Frequency**
$0 \leqslant R < 5$	8
$5 \leqslant R < 10$	24
$10 \leqslant R < 15$	13
$15 \leqslant R < 20$	11
$20 \leqslant R < 25$	4

Draw a frequency polygon for this information.

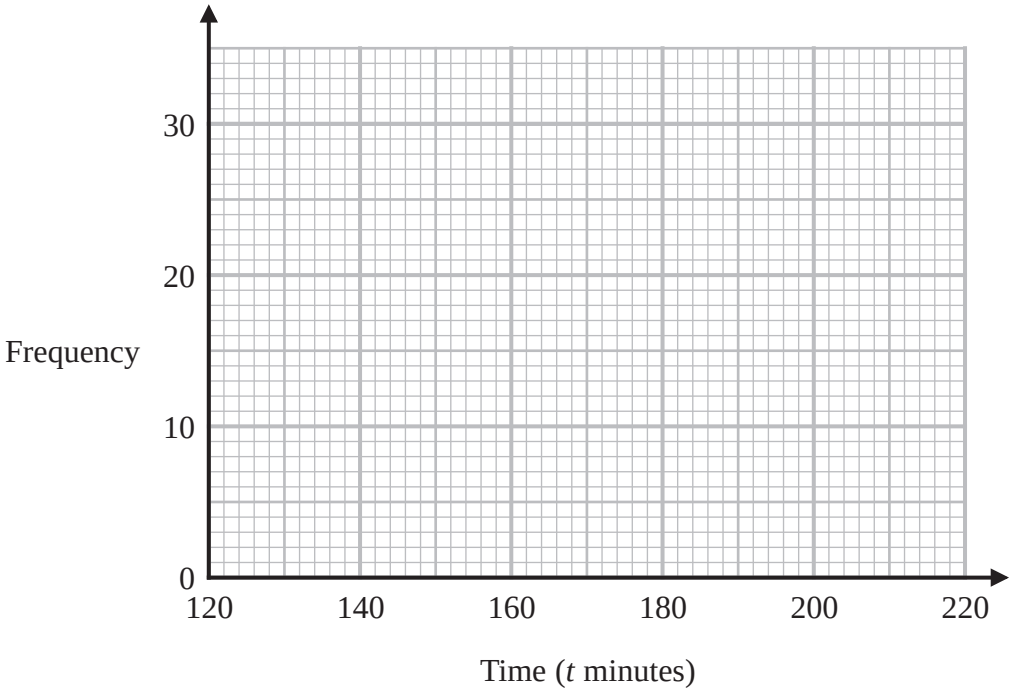


(Total for Question 4 is 2 marks)

1 The table shows information about the times, in minutes, 100 people took to complete a bike race.

Time (t minutes)	Frequency
$120 \leqslant t < 140$	12
$140 \leqslant t < 160$	28
$160 \leqslant t < 180$	30
$180 \leqslant t < 200$	22
$200 \leqslant t < 220$	8

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



(Total for Question 1 is 2 marks)

6 The stem and leaf diagram shows the test scores of 23 students from School **A**.

3	0
4	1 2 4 4 5 7
5	3 4 4 6 7 8 8 9
6	0 8 8 9 9
7	1 3 9

Key:
3 | 0 represents 30

23 students from School **B** did the same test.

Their median score was 56
The range of their scores was 47

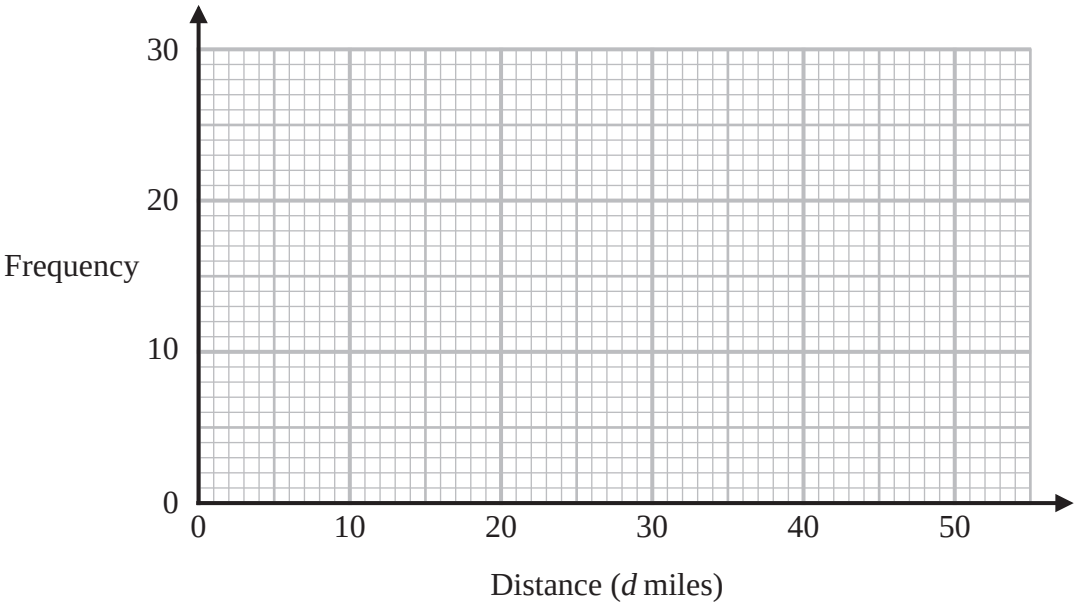
Compare the distribution of the test scores of the students from School **A** with the distribution of the test scores of the students from School **B**.

(Total for Question 6 is 4 marks)

1 The table shows information about the distances that 60 people travel to work.

Distance (d miles)	Frequency
$0 < d \leqslant 10$	12
$10 < d \leqslant 20$	25
$20 < d \leqslant 30$	10
$30 < d \leqslant 40$	8
$40 < d \leqslant 50$	5

Draw a frequency polygon for the information in the table.



(Total for Question 1 is 2 marks)