Write your name here

Surname	Other names

In the style of:

Edexcel GCSE

Centre Number	Candidate Number

Mathematics A

Frequency

Foundation Tier

Past Paper Style Questions
Arranged by Topic

Paper Reference
1MA0/2F

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- **Calculators may be used.**

Information

- The total mark for this paper is 100
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

1 (a) Basil records the types of fish that he caught during his holiday in The Bahamas.

(i) Complete the table.

Type of fish	Tally	Frequency
Mutton Fish	IIII	4
Grouper	III	3
Jack	𝍸 𝍸 II	12
Schoolmaster	𝍸 IIII	9
	Total	28

(3)

(ii) What fraction of the fish are Mutton Fish?
Give your answer in its simplest form.

$\frac{4}{28} = \frac{1}{7}$

$\frac{1}{7}$

(2)

(b) This table shows the types of fish that Peter caught during the holiday.

Type of fish	Mutton Fish	Grouper	Jack	Schoolmaster
Frequency	4	6	5	3

She has finished the first row of a pictogram to show the results. Complete the key and pictogram.

Key:  represents ..2.. fish

Mutton Fish	
Grouper	
Jack	
Schoolmaster	

(4)

(c) 500 000 people record the types of birds in their gardens. In total, they record eight million birds.

On average, how many birds does each person record?

$\frac{8,000,000}{500,000} = \frac{80}{5} = 16$

16

(3)

(d) Here is a list of the birds at a bird table.

robin	robin	sparrow	blackbird	starling
blackbird	starling	blackbird	robin	blackbird

One bird flies away.
Another bird arrives at the bird table.
The new mode is robin.

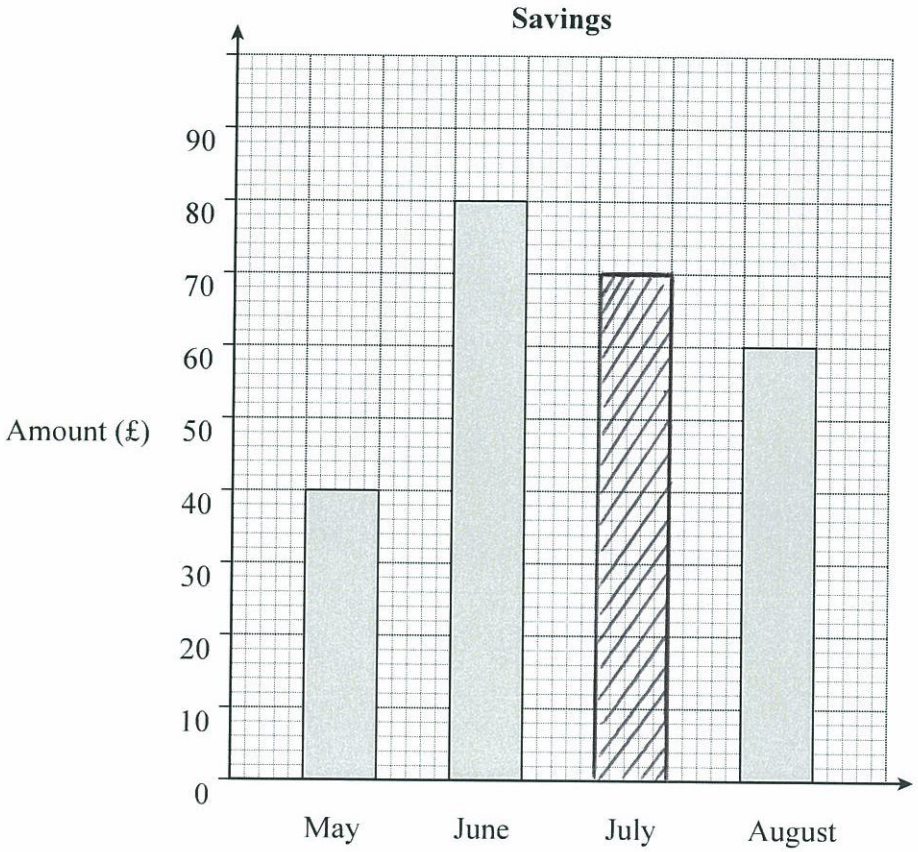
What type of bird flies away and what type of bird arrives? Complete the table.

	Type of bird
Flies away	Blackbird
Arrives	Robin

(2)

(Total 14 marks)

2 (a) The bar chart shows the amounts Isaac saves in May, June and August 2010.



(i) Hc

.....

(1)

(ii) From May to August he saves £250 in total.

Complete the bar chart by drawing the bar for July.

$250 - (40 + 80 + 60)$

$= 250 - 180 = £70$

(3)

(b) The pictogram shows the amounts Isaac saves in the next four months.

Key: ▯▯ represents £20

May	▯▯ ▯▯ ▯▯ ▯▯	£80
June	▯▯ ▯▯ ▯	£50
July	▯▯ ▯	£30
August	▯▯ ▯▯ ▯▯ ▯	£70

Work out the range of the amount he saves in these four months. You **must** show your working.

80 - 30 = £50

↓

Range = Maximum − Minimum

£ 50

(2)

(c) (i) For the next 4 months he saves £50 each month.

How much has he saved in total?

4(50) = £200

Total savings = 250 + 230 + 200 = £680

£ 680

(3)

(ii) Isaac spends 50% of these total savings to pay for a holiday.

How much does he pay for the holiday?

50% of 680 = $\frac{50}{100}$ × 680 = $\frac{1}{2}$(680) = £340

£ 340

(2)

(Total 11 marks)

3. Is money discrete or continuous? Tick a box.

☑ Discrete ☐ Continuous

Give a reason for your answer.

Like any discrete variable, money can be measured or quantified exactly as it can only take a limited (or finite) set of values in any given interval.

(1)

Peter sells revision guides on a website. The sales in May are shown.

Sales (£)	Frequency
8	10
10	18
12	7
15	4
20	1

(a) Calculate his mean price.

$$\text{Mean} = \frac{\sum x}{\sum f} = \frac{10(8) + 18(10) + 7(12) + 4(15) + 1(20)}{10 + 18 + 7 + 4 + 1}$$

$$= \frac{424}{40} = £10.60$$

£ 10.60

(3)

(b) Peter says that his modal price and his median price are both £10. Is he correct?

Give reasons and working to show how you decide.

Mode = £10 (Most frequently occurring price)

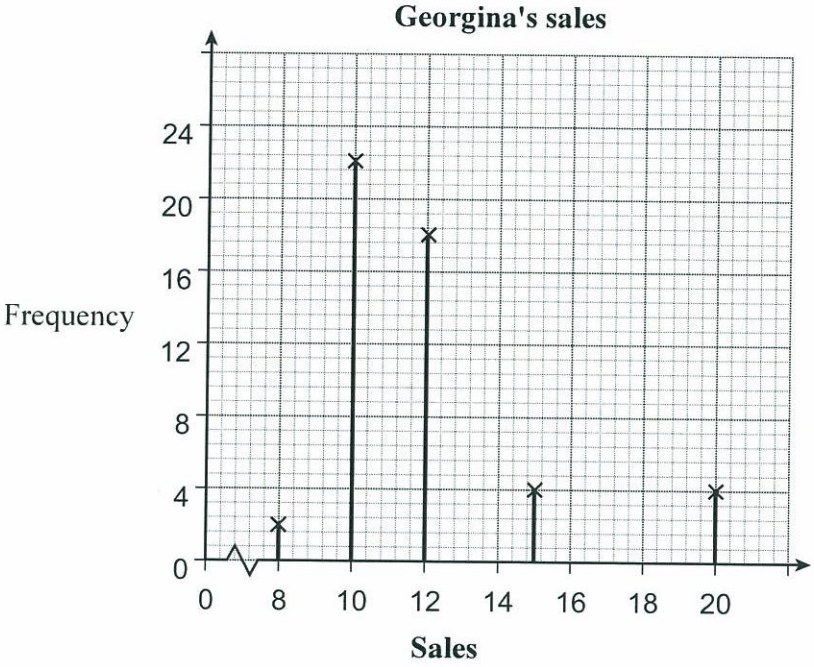
Median = £10 ∴ Peter is correct.

↓

Avg of 20th & 21st data point, i.e. $\frac{£10 + £10}{2} = £10$

(2)

(c) Georgina also sells revision guides on a website



Give **one** similarity and **one** difference in the sales of Peter and Georgina.

Similarity ...Peter and Georgina's modal prices are both £10.....

Difference ...Georgina's sales have a greater median price of £12 compared to Peter's median of £10.....

(2)

(Total 10 marks)

4. Kelsi rolled a dice 10 times.

Here are her scores.

1 5 6 4 4 2 2 3 4 3

(a) Find the mode.

4

(1)

(b) Work out the mean.

$$\text{Mean} = \frac{\sum x}{f} = \frac{34}{10} = 3.4$$

3.4

(2)

(c) Work out the range.

$$\text{Range} = \text{Max} - \text{min} = 6 - 1 = 5$$

5

(2)

(Total 5 marks)

5. Here is a list of the fruit 24 people liked best.

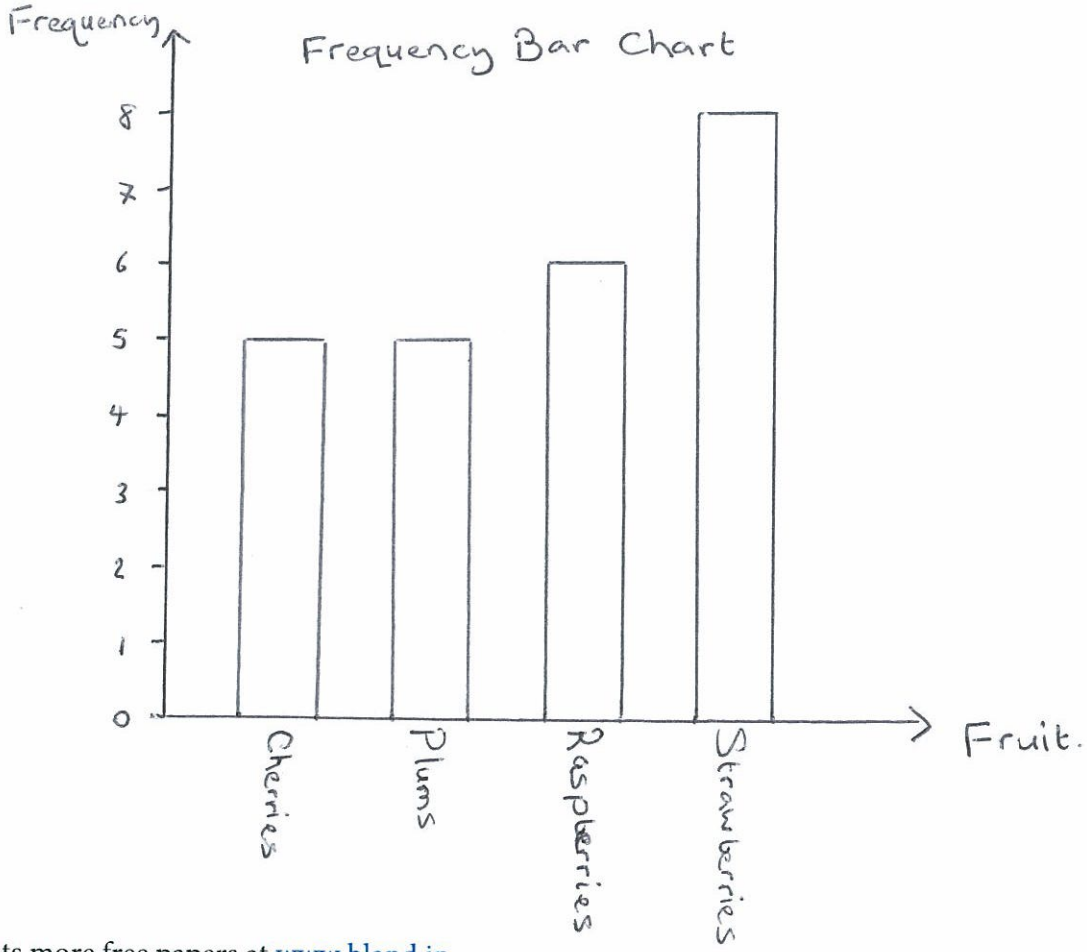
cherries	strawberries	cherries	rasberries	strawberries	plums
rasberries	cherries	strawberries	plums	rasberries	rasberries
rasberries	cherries	cherries	plums	strawberries	strawberries
plums	rasberries	strawberries	strawberries	plums	strawberries

(a) Complete the table for the information in the list.

Fruit	Tally	Frequency
cherries	𝍸	5
plums	𝍸	5
rasberries	𝍸 I	6
strawberries	𝍸 III	8

(2)

(b) Draw a suitable diagram to show this information in the table.
Use the space below.



6.

	Male	Female
First year	397	608
Second year	250	210

The table gives information about the numbers of students in the two years of a college course.

Hanna wants to interview some of these students.
She takes a random sample of 50 students stratified by year and by gender.
Work out the number of students in the sample who are male and in the first year.

$$\frac{397}{397+608+250+210} \times 50$$

$$= \frac{397}{1465} \times 50$$

$$= 14 \text{ (to nearest integer)}.$$

14

(Total 3 marks)

7. Tara carried out a survey of the number of school dinners 34 students had in one week.

The table shows this information.

Number of school dinners	Frequency	fx (i.e. $f \times x$)
0	0	0
1	8	8
2	12	24
3	7	21
4	5	20
5	2	10
	$\Sigma f =$ 34	$\Sigma fx =$ 83

Calculate the mean.

$$\text{Mean} = \frac{\Sigma x}{f} \text{ OR } \frac{\Sigma fx}{\Sigma f} = \frac{83}{34} = 2.44 \text{ (3s.f.)}.$$

2.44 (3 s.f.).

(Total 3 marks)

8. Sophie asked 32 women about the number of children they each had.

The table shows information about her results.

Number of children	Frequency	fx
0	9	0
1	6	6
2	7	14
3	8	24
4	2	8
more than 4	0	0

$\Sigma f = 32$ $\Sigma fx = 52$

(a) Find the mode.

0

.....

(1)

(b) Calculate the mean.

$$\text{Mean} = \frac{\Sigma fx}{\Sigma f} = \frac{52}{32} = 1.625$$

or 1.63 (3 s.f.).

1.625

.....

(3)

(Total 4 marks)

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

Age (in years)	Frequency	Cumulative Freq.
0 to 9	6	6
10 to 19	13	19
20 to 29	12	31
30 to 39	9	40
40 to 49	7	47
50 to 59	4	51
60 to 69	9	60

Class containing the 30th and 31st data values. →

(a) Write down the modal class.

10 to 19

(1)

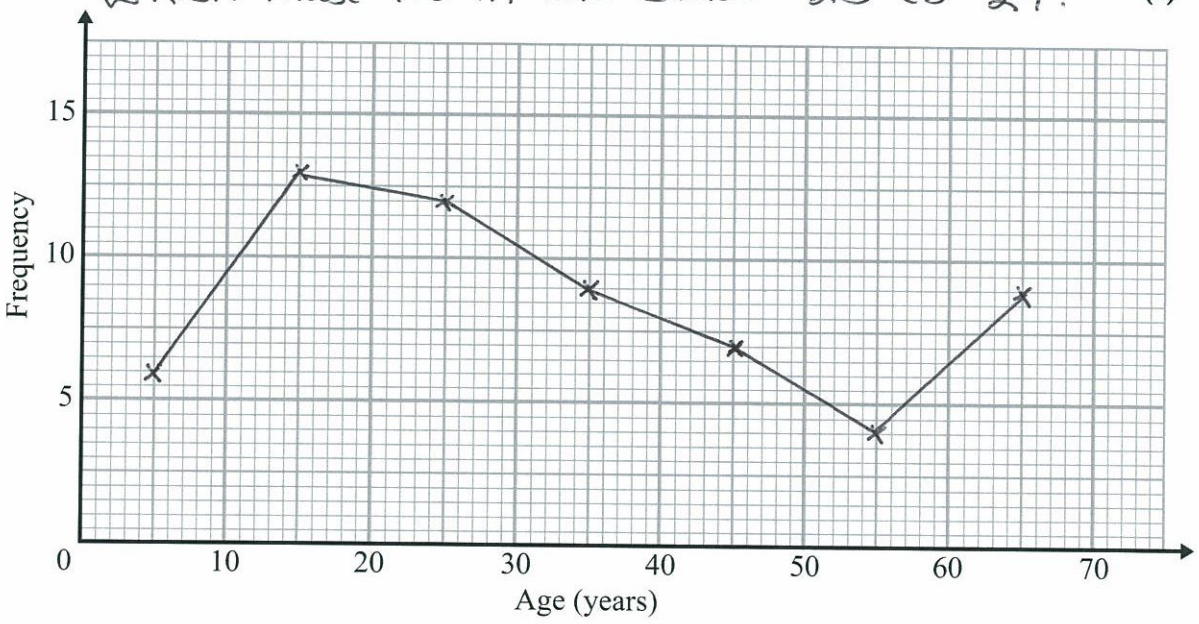
David says

'The median lies in the class 30 to 39'

David is wrong.

(b) Explain why.

The median in this case will be the average of (or mid-way between) the ages for the 30th and 31st person which must lie in the class 20 to 29. **(1)**



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

(2)

(Total 4 marks)

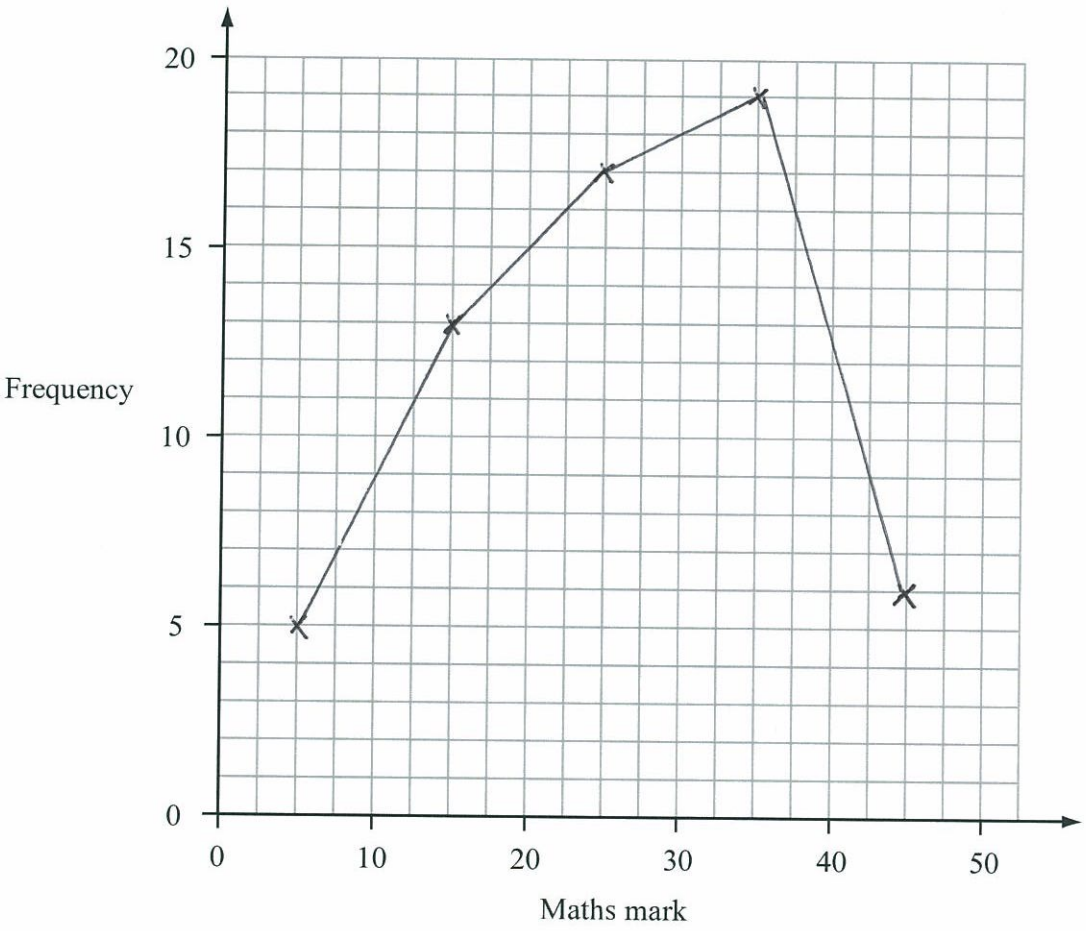
10. 60 students take a maths test.

The test is marked out of 50.

This table shows information about the students' marks.

Maths mark	0–10	11–20	21–30	31–40	41–50
Frequency	5	13	17	19	6

On the grid, draw a frequency polygon to show this information.

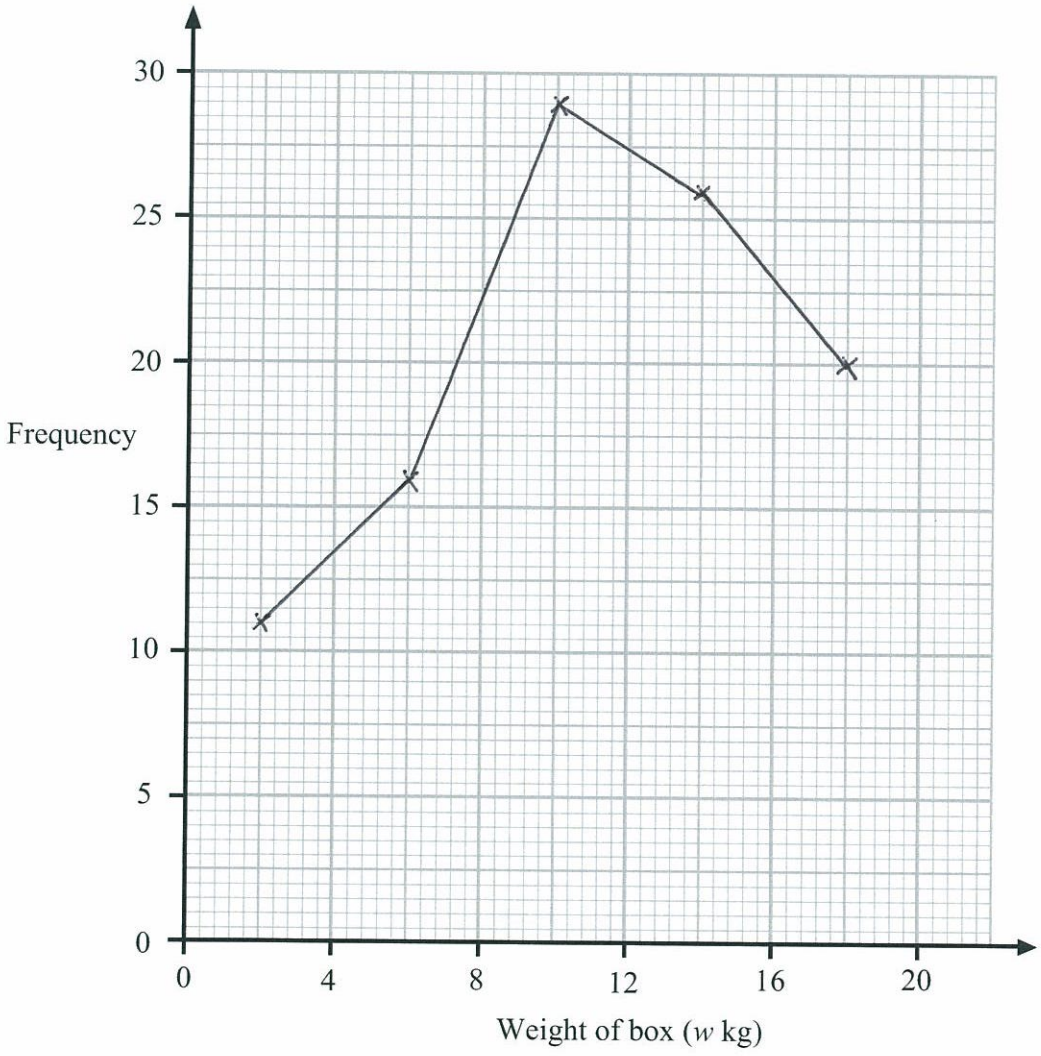


(Total 2 marks)

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

Weight of box (w kg)	Frequency
$0 < w \leqslant 4$	11
$4 < w \leqslant 8$	16
$8 < w \leqslant 12$	29
$12 < w \leqslant 16$	26
$16 < w \leqslant 20$	20

Draw a frequency polygon to show this information.

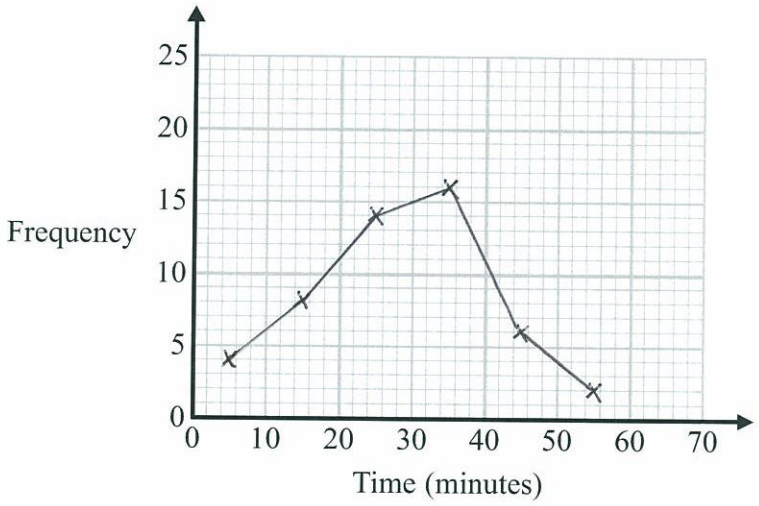


(Total 2 marks)

12. The frequency table gives information about the times it took some children to get to school 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.

$30 < t \leqslant 40$

(1)

One of the children is chosen at random.

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

P(more than 40 mins) $= \frac{6+2}{50} = \frac{8}{50} = \frac{4}{25}$

or 0.16

$\frac{4}{25}$

(2)

(Total 5 marks)