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GCSE
Mathematics (Calculator Paper)

Practice Paper Style Questions – Topic: Frequency (Foundation Tier)

For this paper you must have:

- black pen
- HB pencil
- ruler (with cm & mm)
- rubber
- protractor
- compass
- pencil sharpener
- calculator

Time allowed
- 1 hour

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 space 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 that you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is **64**.
  The quality of your written communication is specifically assessed in questions indicated with an asterisk (*)
- You may ask for more answer paper and graph paper.
  These must be tagged securely to this answer booklet.
- A calculator MAY be used.

Advice
- Read each question carefully before you answer it.
- In all calculations, show clearly how you work out your answer.
- Check your answers if you have time at the end.

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED

1 (a) Paul records the goal scorers for his favourite team during their recent matches.

(i) Complete the table:

Goal Scorer	Tally	Frequency
Christian Benteke	IIII	
Andreas Weimann	III	
Darren Bent	IIII IIII II	
Gabriel Agbonlahor	IIII IIII	
	TOTAL	

(3 marks)

(ii) What fraction of the goals were scored by Christian Benteke?

Give your answer in its simplest form.

Answer .... *(2 marks)*

(b) This table shows the number of goals scored by each player last season:

Goal Scorer	Benteke	Weimann	Bent	Agbonlahor
Frequency	8	6	15	13

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

Key: ⚽ **represents ………………….. goals**

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Benteke	
Weimann	
Bent	
Agbonlahor	

(4 marks)

(c) 500,000 people record the types of birds in their gardens.

In total, they record six million birds.

On average, how many birds does each person record?

Answer .... *(2 marks)*

(d) Here is a list of the birds that arrive in one garden:

sparrow   robin   sparrow   blackbird   starling

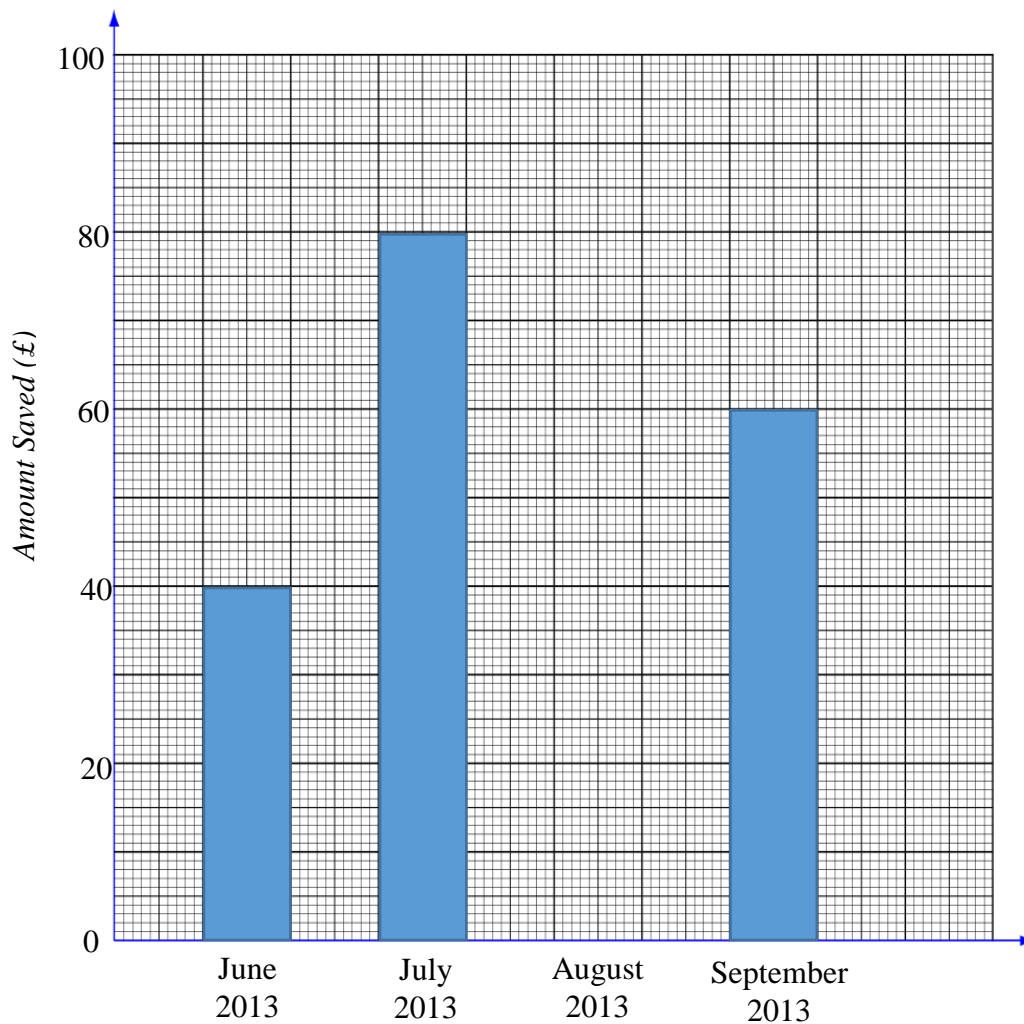starling   starling   blackbird   sparrow   starling

One bird flies away and another bird arrives in the garden. The new mode is sparrow.

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

	Type of bird
Flies away	
Arrives	

(1 mark)

2 (a) The bar chart shows the amount of money Tom saved in June, July and September 2013.

(i) How much does he save in June 2013?

Answer .... *(1 mark)*

(ii) From June to September he saved £270 in total.

Complete the bar chart by drawing the bar for August.

(2 marks)

10

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

Key: represents £20

October 2013	
November 2013	
December 2013	
January 2014	

Work out the range of amounts he saves in these four months.

You must show your working.

Answer ....£.................................... *(2 marks)*

(c) (i) For the next 5 months he saves £50 each month.

How much has he saved in total from June 2013 to June 2014 inclusive?

Answer ....£.................................... *(3 marks)*

(ii) Tom uses 50% of these total savings to pay for a summer holiday.

How much does he pay for the holiday?

Answer ....£.................................... *(2 marks)*

3 (a) (i) Decide whether the following types of data collected for a group of students are discrete or continuous by ticking the relevant box:

	Discrete	Continuous
Weight	☐	☐
Amount of savings	☐	☐
Running speed	☐	☐
Number of GCSE passes	☐	☐

(2 marks)

(ii) *Explain the difference between discrete and continuous data.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

(1 mark)

(b) Paul sells a range of revision guides on his website. The sales for March are shown:

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

Calculate his mean price.

Answer ....£.................................... *(3 marks)*

13

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

Yes ☐   **No** ☐

*Give reasons and workings to show how you decided.

……

……

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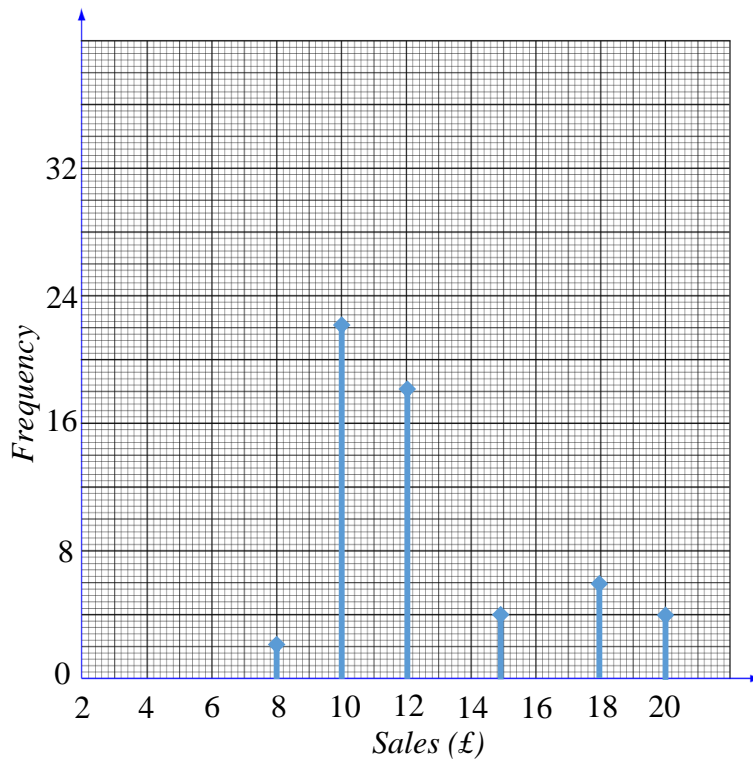*(2 marks)*

(d) Jo also sells revision guides online. Her sales are shown on the chart below:

Give **one** similarity and **one** difference in the sales of Paul and Jo:

Similarity…………………………………………………………………………………………………

……

Difference…………………………………………………………………………………………………

……..

(2 marks)

4   Jo rolls a dice ten times.

Here are her scores:

1   5   6   3   4   2   2   3   4   3

(a) Find the mode.

Answer .... *(1 mark)*

(b) Work out the mean.

Answer .... *(2 marks)*

(c) Work out the range.

Answer .... *(1 mark)*

5   Here is a list of football teams supported by 25 people:

Liverpool	Arsenal	Liverpool	Chelsea	Man City
Man City	Liverpool	Arsenal	Arsenal	Arsenal
Arsenal	Liverpool	Liverpool	Man City	Chelsea
Man City	Chelsea	Chelsea	Chelsea	Arsenal
Chelsea	Arsenal	Man City	Arsenal	Arsenal

(a) Complete the table using the information from the list:

Team	Tally	Frequency
Liverpool		
Man City		
Chelsea		
Arsenal		

(2 marks)

10

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(b) Draw a bar chart to show the information from the table.

Use the space below.

(3 marks)

6 This table gives information about the numbers of students in the two years of a college course:

	Male	Female
First Year	367	613
Second Year	240	228

Jo 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 female and in the second year.

Answer .... *(3 marks)*

7 Paul carried out a survey of the number of books 40 students read in one week.

The table shows this information:

Number of books	Frequency	
0	1	
1	8	
2	13	
3	9	
4	6	
5	3	

Calculate the mean.

Answer .... *(3 marks)*

9

8 Tom asked 50 students about the number of times they exercised in one week.

The table shows this information:

Number of times	Frequency	
0	9	
1	8	
2	13	
3	11	
4	5	
More than 5	4	

(a) Find the mode.

Answer …………………………….…...*(1 mark)*

(b) Calculate the mean.

Answer ……………………….…...*(3 marks)*

9   The table shows the ages, in years, of 60 first year college students:

Age (in years)	Frequency
0 to 9	0
10 to 19	17
20 to 29	5
30 to 39	12
40 to 49	9
50 to 59	6
60 to 69	1

(a) Write down the modal class.

Answer ……………………………..….. *(1 mark)*

Paul says, 'The median lies in the class 30 to 39'.

Is Paul correct or incorrect? Please circle:

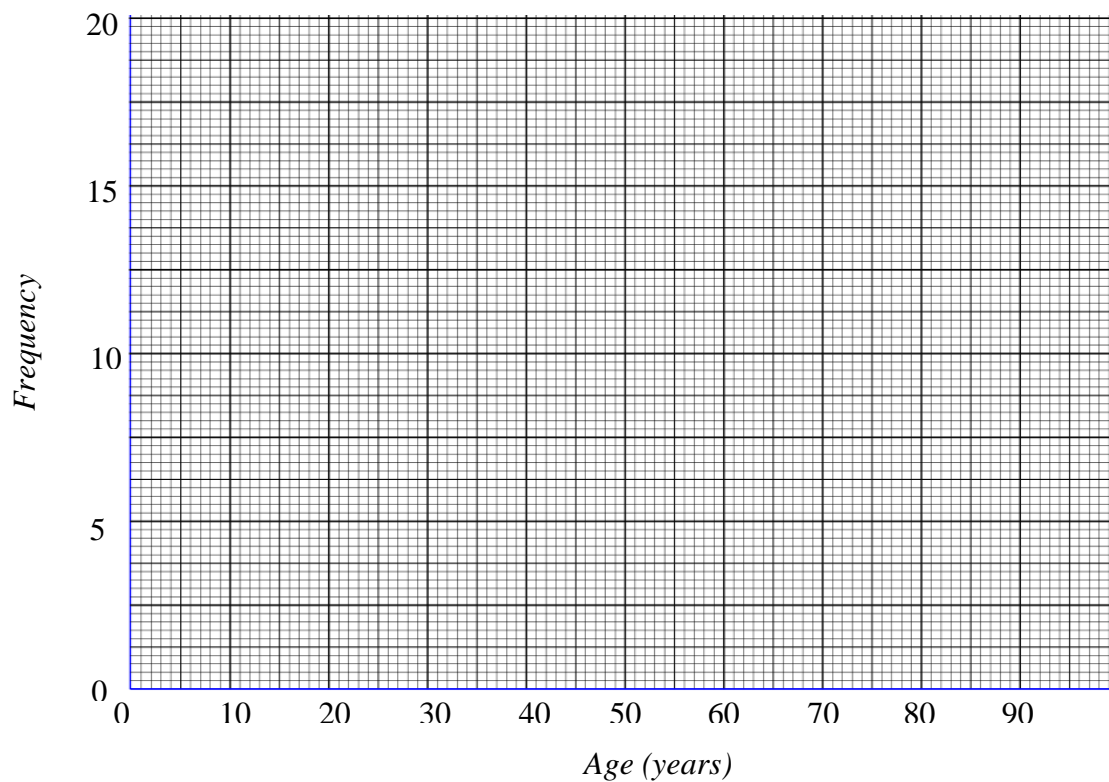**correct**   **incorrect**

(b) *Explain why.

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

(1 mark)

6

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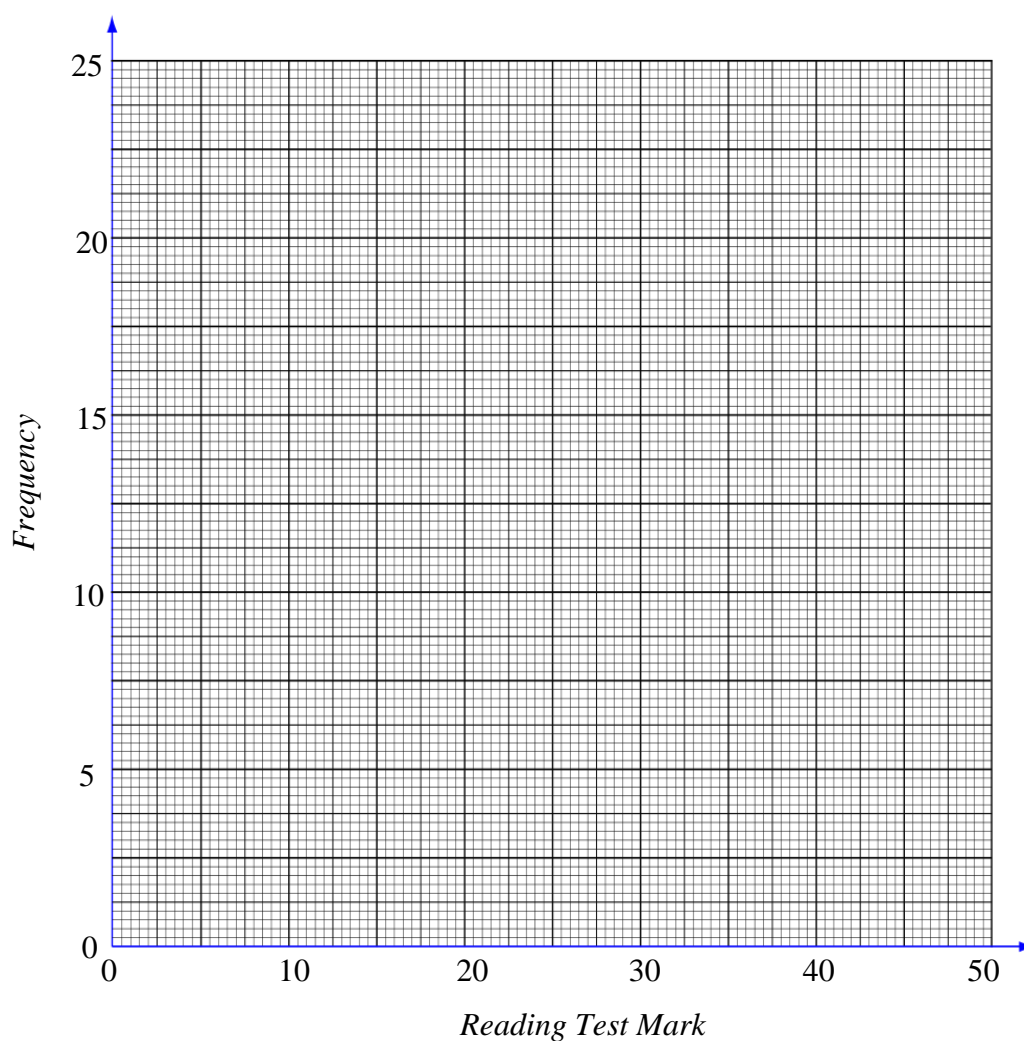

(2 marks)

10 70 students take a reading test.

The test is marked out of 50.

This table shows information about the students' marks:

Reading mark	0-10	11-20	21-30	31-40	41-50
Frequency	5	14	20	23	8

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

(2 marks)

4

11 This table shows the weight, in kg, of 100 boxes:

Weight of box (w kg)	Frequency
$0 < w \leq 4$	12
$4 < w \leq 8$	15
$8 < w \leq 12$	30
$12 < w \leq 16$	24
$16 < w \leq 20$	19

Draw a frequency polygon on the grid below to show this information.

Weight of Box (w kg)
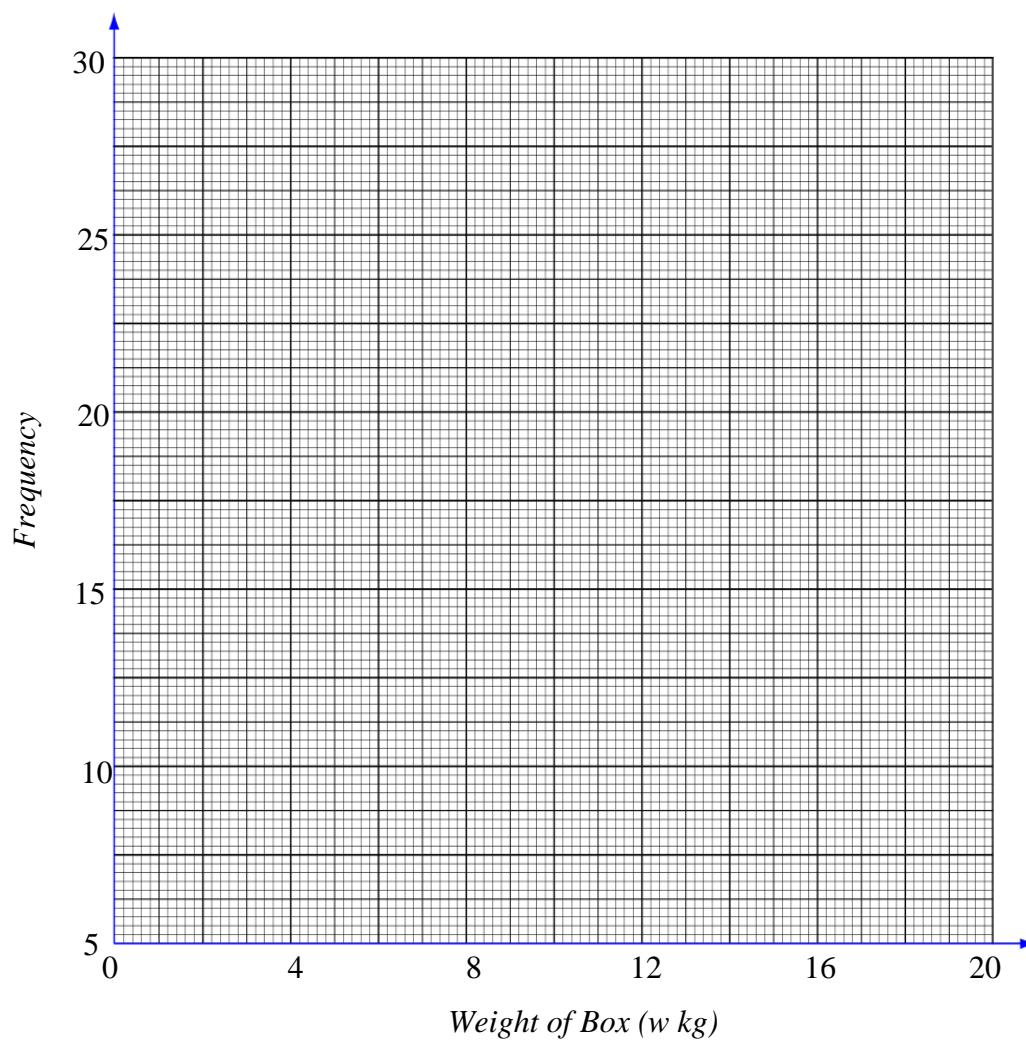
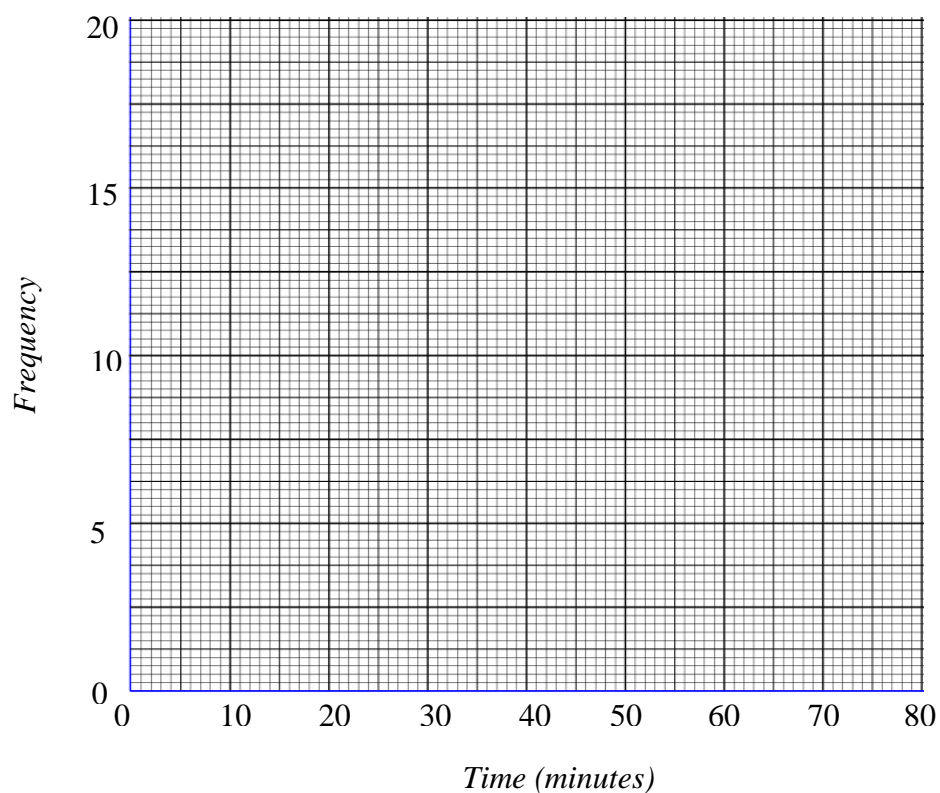*(2 marks)*

12 The frequency table gives the times it took 50 students to get to college one day:

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

(a) Draw a frequency polygon for this information, using the grid below:

Time (minutes)

(2 marks)

4

(b) Write down the modal class interval.

Answer ………………………………..….. *(1 mark)*

One of the students is chosen at random.

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

Answer .... *(2 marks)*

END OF QUESTIONS

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