

Centre Number						Candidate Number				
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Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
TOTAL	

In the style of



General Certificate of Secondary Education  
Foundation Tier

# Mathematics

# 43601F

Past Paper Questions by Topic

## Frequency

# F

For this paper you must have:

- mathematical instruments.

You must **not** use a calculator.



### Time allowed

- 1 hour 15 minutes

### 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 spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

### Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is.
- 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.

### Advice

- In all calculations, show clearly how you work out your answer.

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	
Grouper	III	
Jack	### ## II	
Schoolmaster	### IIII	
	<b>Total</b>	

(3)

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



(2)

1 (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

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

Key:  represents ..... fish

Mutton Fish	 
Grouper	
Jack	
Schoolmaster	

(4)



**1 (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?

.....  
**(3)**

**1 (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	
Arrives	

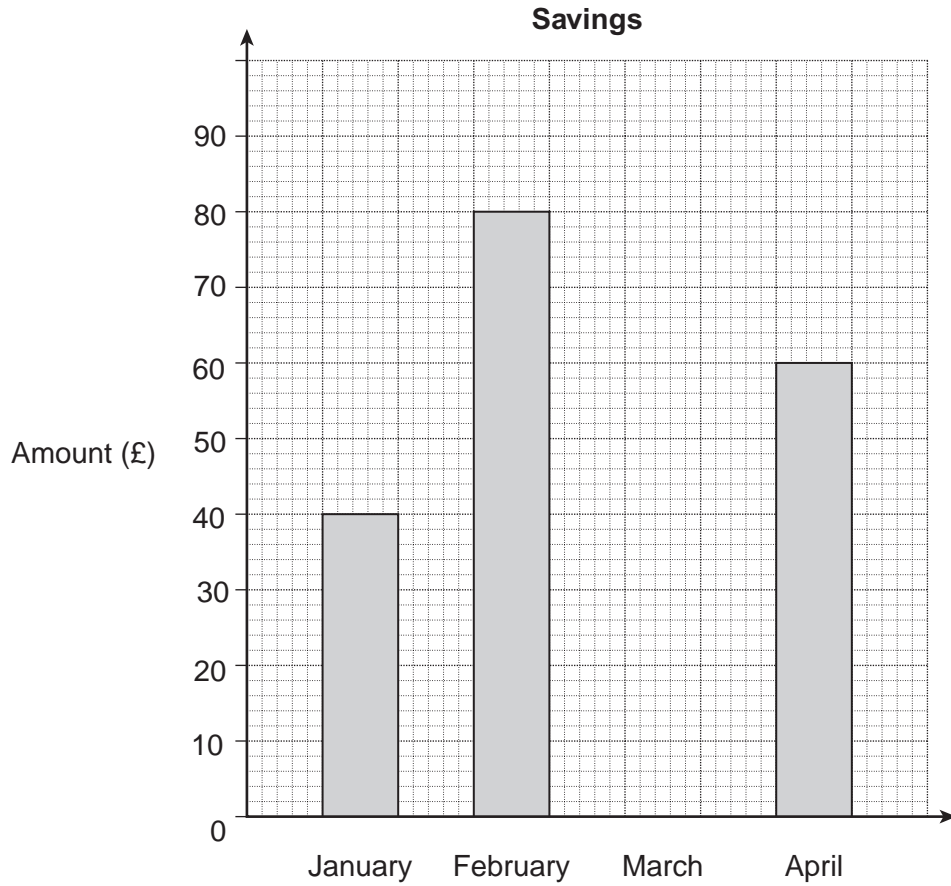
**(2)**

**(Total 14 marks)**



2 (a)

The bar chart shows the amounts Louis saves in January, February and April 2012.



2 (a) (i) How much does he save in January 2012?

Answer £ ..... (1 mark)

2 (a) (ii) From January to April he saves £250 in total.

Complete the bar chart by drawing the bar for March.

.....

.....

.....

.....

(3 marks)



**2 (b)** The pictogram shows the amounts Louis saves in the next four months.

Key: 

--	--

 represents £20

<b>May</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>								
<b>June</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>								
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<b>August</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td style="width: 20px; height: 20px;"></td></tr> </table>								

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

.....  
 .....

Answer £ ..... (2 marks)

**2 (c) (i)** For the rest of 2012 Louis saves £50 each month.

How much does he save in 2012 in total?

.....  
 .....

Answer £ ..... (3 marks)

**2 (c) (ii)** Louis spends 50% of these total savings to pay for a holiday.

How much does he pay for the holiday?

.....  
 .....

Answer £ ..... (2 marks)



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

Discrete

Continuous

Give a reason for your answer.

.....  
.....

(1 mark)

**\*4** A company pays people to visit shops as a mystery shopper.  
Peter works for this company.  
His fees in September are shown.

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

**4 (a)** Calculate his mean fee.

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

Answer £ ..... (3 marks)

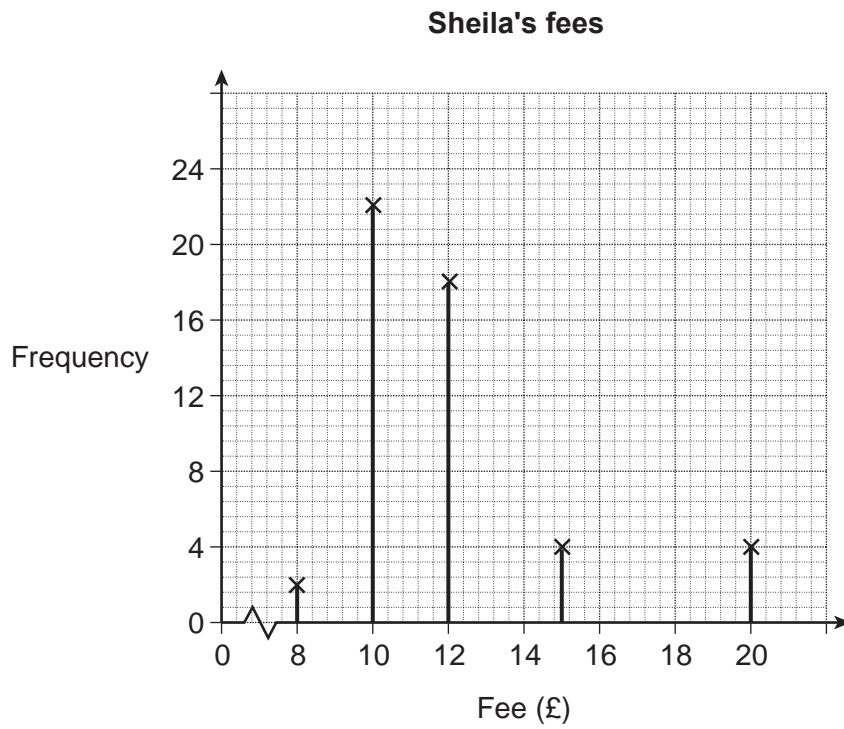
**4 (b)** Peter says that his modal fee and his median fee are both £10. Is he correct?  
Give reasons and working to show how you decide.

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

(2 marks)



- 4 (c) Sheila also works for this company.  
Her fees in the same month are shown.



Give **one** similarity and **one** difference in the fees of Peter and Sheila.

Similarity .....

.....

Difference .....

.....

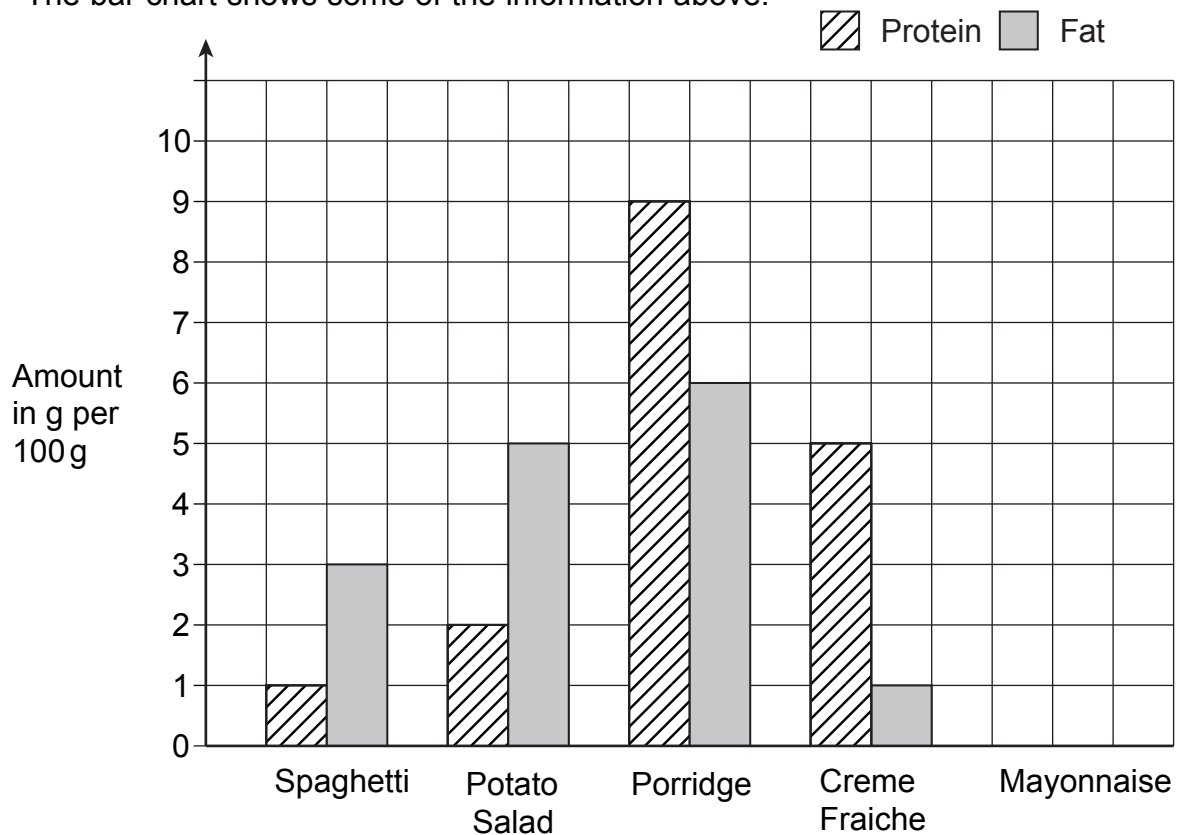
(2 marks)



5 Marie is collecting data to show how much protein and fat are in some food products. The table shows her results.

Product	Spaghetti	Potato Salad	Porridge	Creme Fraiche	Mayonnaise
Amount of protein per 100 g	1g	2g	9g	5g	1g
Amount of fat per 100 g	3g	5g	6g	1g	10g

The bar chart shows some of the information above.



5 (a) Complete the bar chart for the Mayonnaise.

(2 marks)

5 (b) Which product has the most protein per 100 g?

Answer ..... (1 mark)

5 (c) Which product has  $2\frac{1}{2}$  times more fat than protein?  
Explain your answer.

.....  
 .....

(1 mark)



The table shows the weather in Birmingham each day for 40 days.

6 (a)

Weather	Tally	Frequency
Sun	### ##	
Rain	### ## ## III	
Snow	IIII	
Fog	### III	
		<b>Total = 40</b>

Complete the table.

(2 marks)

6 (b)

What fraction of the 40 days are sunny?  
Give your answer in its simplest form.

.....

6 (c)

Answer .....

(2 marks)

In Glasgow for the 40 days

- 16 days are sunny
- 50% of the days have rain
- there is no snow.

6 (c) (i)

Complete the table for Glasgow.

Weather	Frequency
Sun	
Rain	
Snow	
Fog	
<b>Total = 40</b>	

(3 marks)

6 (c) (ii)

One of the 40 days in Glasgow is chosen at random. Use a suitable probability **word** to complete the sentences.

The chance of choosing a day with snow is.....

The chance of choosing a day with rain is .....

(2 marks)



\* 7

David takes four Mathematics tests.  
The pictogram shows his scores.

Algebra	○ ○ ○
Geometry	○ ○ ◐
Arithmetic	○ ○ ○ ○ ◐
Statistics	○ ○

7 (a) David scores 60% in Algebra.

Complete the key. Key: ○ represents .....%

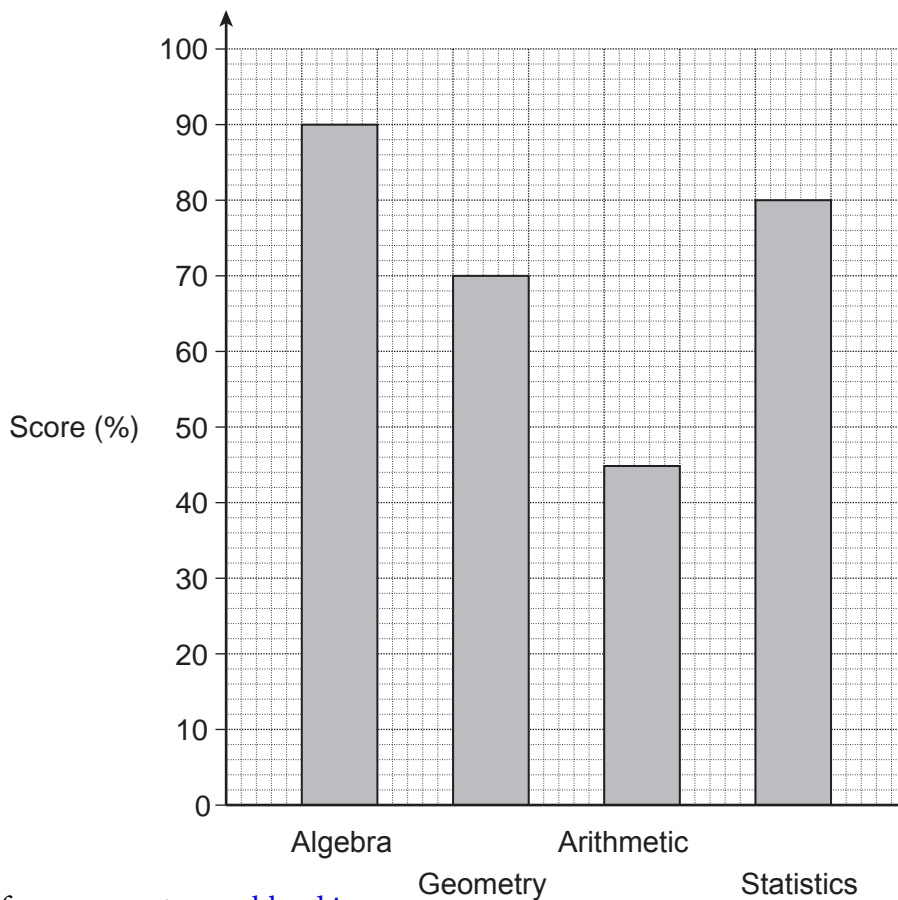
(1 mark)

7 (b) In which subject is his highest score?

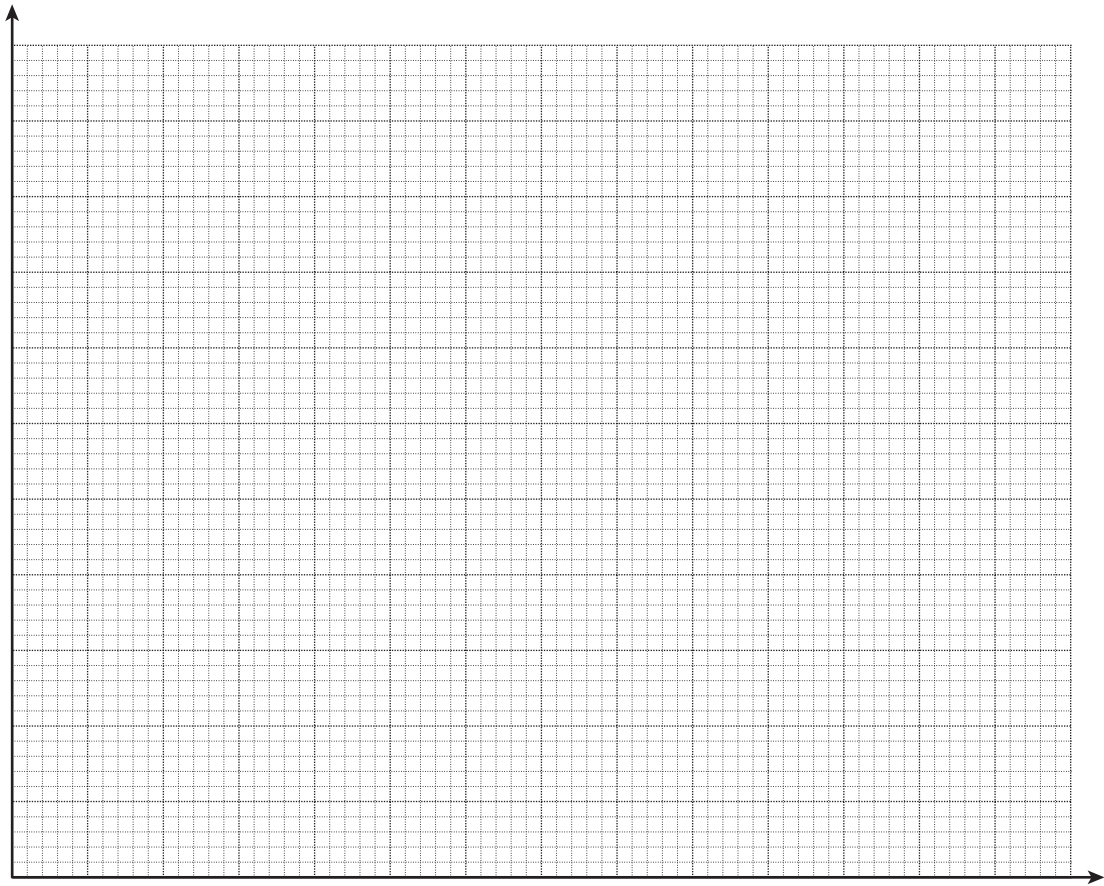
Answer .....

(1 mark)

7 (c) Helen takes the same four tests.  
The bar chart shows her scores.



7 (c) (i) David wants to compare his scores with Helen's scores. Draw a suitable diagram that he can use.



(4 marks)

7 (c) (ii) Write down **three** facts comparing their scores.

Fact 1 .....

.....

Fact 2 .....

.....

Fact 3 .....

.....

(3 marks)



8 A company makes boxes of matches.

The company checks that the boxes contain 50 matches.



8 (a) The number of matches in a sample of 11 boxes is

51 50 51 51 52 43 50 50 51 51 50

8 (a) (i) Write down the mode.

Answer ..... (1 mark)

8 (a) (ii) Work out the median.  
You **must** show your working.

.....  
.....

Answer ..... (2 marks)

8 (a) (iii) Work out the mean.

.....  
.....

Answer ..... (3 marks)

8 (b) The company claims there are 50 matches in a box.

8 (b) (i) Give a reason why this claim seems fair.

.....  
.....

(1 mark)

8 (b) (ii) Give a reason why this claim seems unfair.

.....  
.....

(1 mark)



8 (c) The company uses the first 11 boxes produced each Monday to check the contents. State **two** ways this method of sampling can be improved.

1 .....

.....

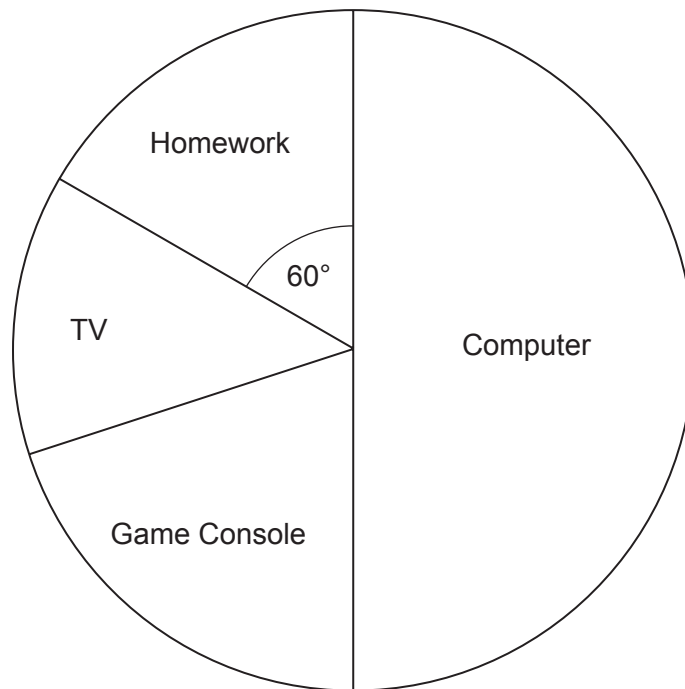
2 .....

.....

(2 marks)



9 The pie chart shows the activities of 60 students after school finished one day.



9 (a) How many students go on their computer?

.....

Answer ..... (1 mark)

9 (b) How many students watch TV or play on their game console?

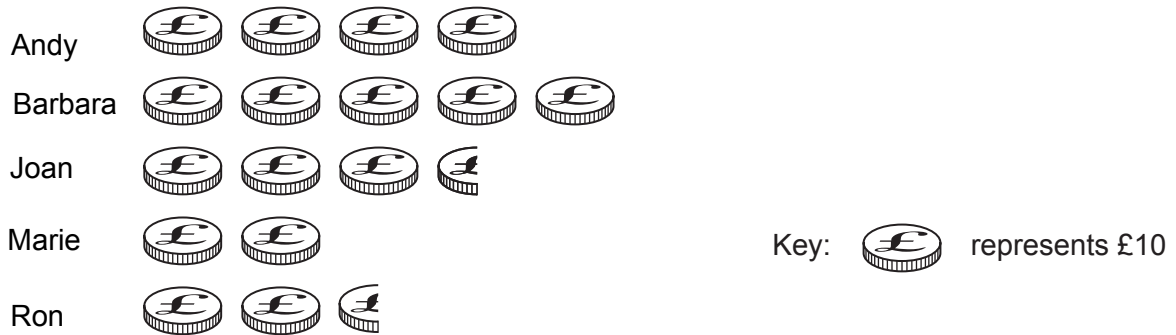
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Answer ..... (3 marks)



10 The pictogram shows the amount of money that five friends raised for charity.



10 (a) Who raised the most money?

Answer ..... (1 mark)

10 (b) How much money did Ron raise?

Answer £ ..... (1 mark)

10 (c) How much money did the five students raise altogether?

.....  
.....

Answer £ ..... (2 marks)

10 (d) Sid raised £42 for the same charity.

Explain why it may be difficult to show his amount on the pictogram.

.....  
.....

(1 mark)



**11** Sophie asks 18 pupils to choose their favourite fruit from a list.  
These are her results.

apples    bananas    apples    oranges    oranges    apples  
 apples    plums    apples    oranges    apples    oranges  
 oranges    bananas    oranges    oranges    oranges    bananas

Sophie decides to draw a pie chart to show these results. The table shows some of his work.

Favourite vegetable	Tally	Frequency	Angle on pie chart
Bananas (B)		3	60°
Apples (A)			
Oranges (O)			
Plums (P)			
		Total = 18	Total = 360°

**11 (a)** Complete the tally and frequency columns in the table.

(2 marks)

**11 (b) (i)** Complete the angle on the pie chart column in the table.

.....

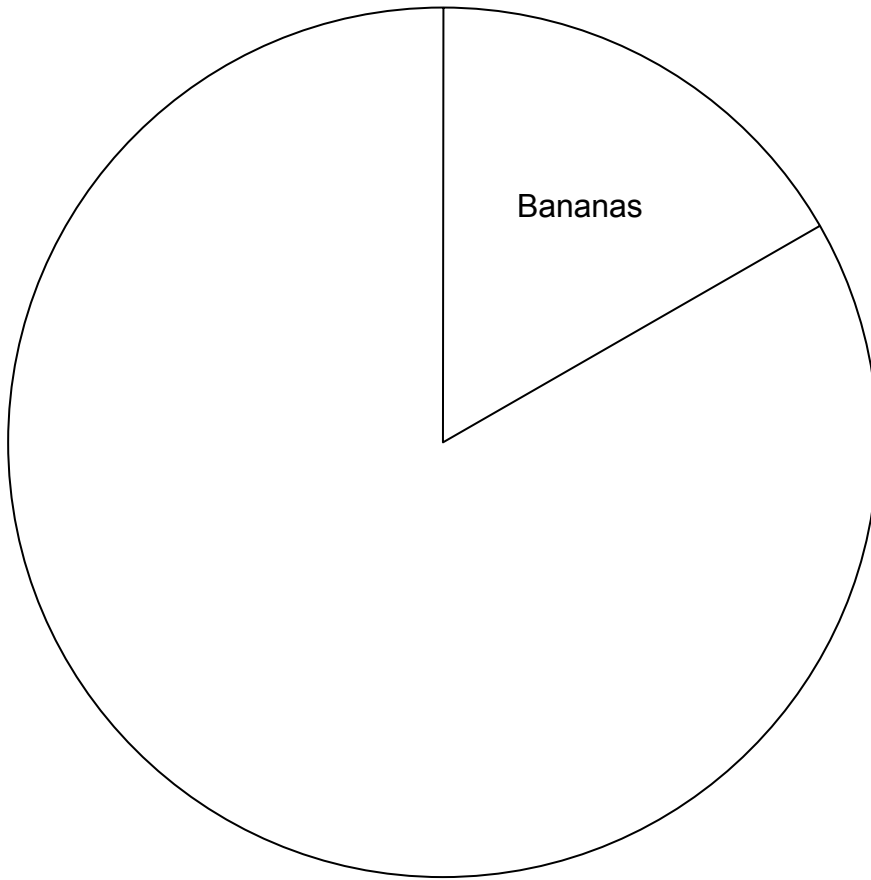
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(2 marks)



11 (b) (ii) Complete the pie chart to represent this information.



(2 marks)



**12(a)** Hassan bought 90 tomato plants, 30 of which were a variety called Moneymaker. He measured and recorded their heights after 2 weeks.

Height (cm)	Number of plants	
3	0	
4	4	
5	6	
6	9	
7	8	
8	3	

Calculate the mean height.

.....  
 .....

Answer ..... (3 marks)

**12 (b)** The varieties Shirley and Alicante were bought at the same time.

Their heights are shown in the table.

		Height of Alicante (cm)						Total
		1	2	3	4	5	6	
Height of Shirley (cm)	1	0	0	0	0	0	0	0
	2	1	0	0	0	0	0	1
	3	2	1	1	0	0	0	4
	4	0	3	4	1	0	0	8
	5	0	1	2	3	2	0	8
	6	0	0	3	3	2	1	9
	Total	3	5	1	7	4	1	30

**12 (b) (i)** What is the median height for Shirley?

Show clearly how you obtain your answer.

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

Answer ..... (2 marks)



**12 (b) (ii)** Hassan claims that Shirley grows faster than Alicante.

How can you tell from the table that this is true?

.....

.....

.....

*(1 mark)*



**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**

