Non-calculator Questions

NCFE

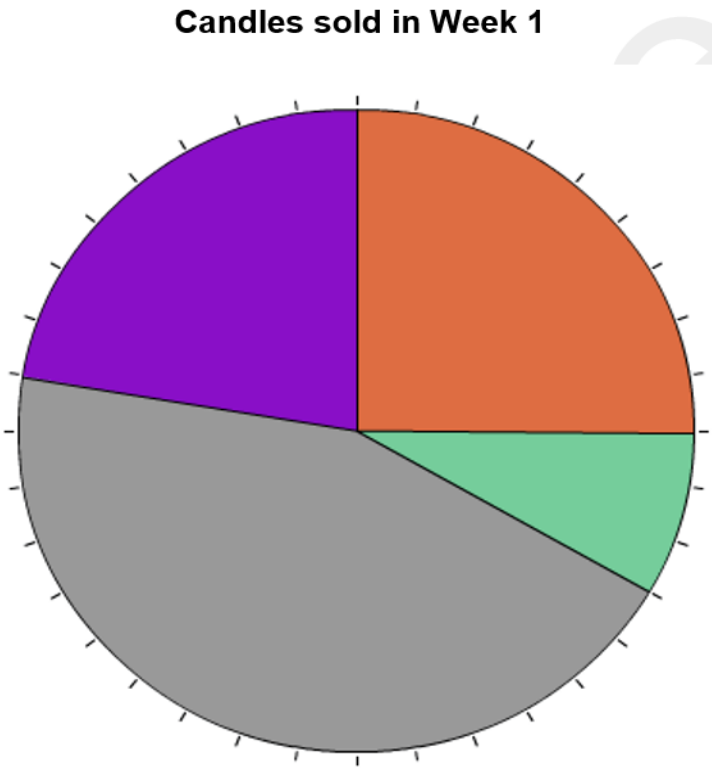
1.

Denise sells candles for two weeks.

She wants to compare the number and type of candles she sold in **Week 1** with the number and type of candles she sold in **Week 2**.

After the second week of selling candles, Denise wants to produce a pie chart to compare sales of candles from Week 1 and Week 2.

This is the pie chart for candles she sold in **Week 1**.



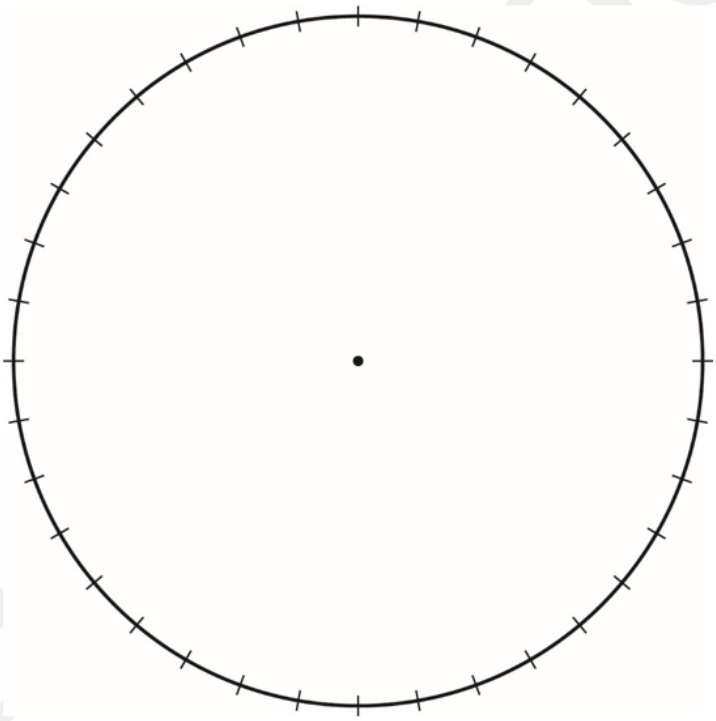
a)

This table shows the number and type of candles sold in **Week 2**.

Type of the candle	Number of candles sold in Week 2
Vanilla	80
Lavender	120
Cherry	100
Linen	60

Draw and label the pie chart below for **Week 2**.

Candles sold in Week 2



Type

	Vanilla
	Lavender
	Cherry
	Linen

b)

Make **one** comparison between **Week 1** and **Week 2**.

[4 marks]

Highfield

2.

You are reviewing the nursery's expenses. You create this spreadsheet:

Expense	Amount per week (£)
Gas & Electricity	75.13
Food	62.95
Activity materials	41.92

How much does the nursery spend each week?

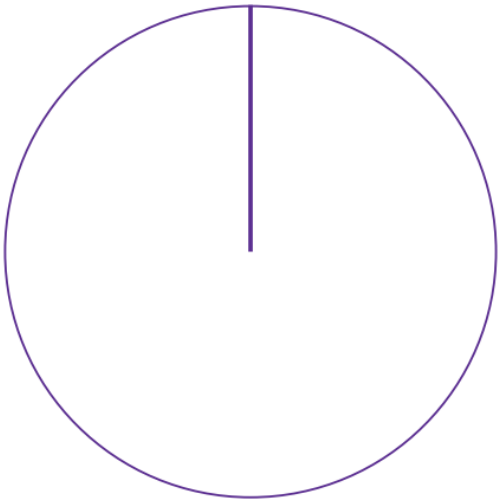
Write the answer in the box below. *(1 mark)*

Answer: £_____

b)

Represent the expenses data from 2a in a pie chart.

Draw the angles to the nearest whole degree.



Show your working out in the box below. ***(3 marks)***

3.

You are preparing a presentation on the different types of birds in the reserve.

You display the figures in a chart.

Chart to show number of birds in the reserve

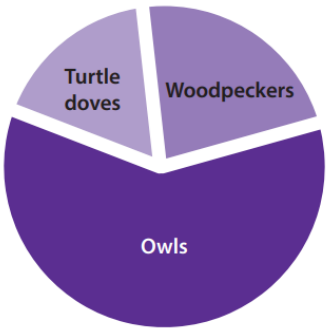


Diagram not to scale

- $\frac{1}{5}$ of birds are woodpeckers
- 70% of the birds are owls
- The remainder of the birds are turtle doves

Calculate the angles to complete the table below. ***(3 marks)***

Type of bird	Angle in pie chart (°)
Woodpeckers	
Owls	
Turtle doves	

Workings

4.

The company you work for records the number and type of packages it delivers.

Each month the figures are displayed in a chart.

The angles on the chart represent the number of parcels delivered.

Diagram not to scale

- Small parcels make up 2/5 of the packages
- Letters make up 17% of the packages
- Large parcels make up the remainder of the packages

Complete the table below. ***(3 marks)***

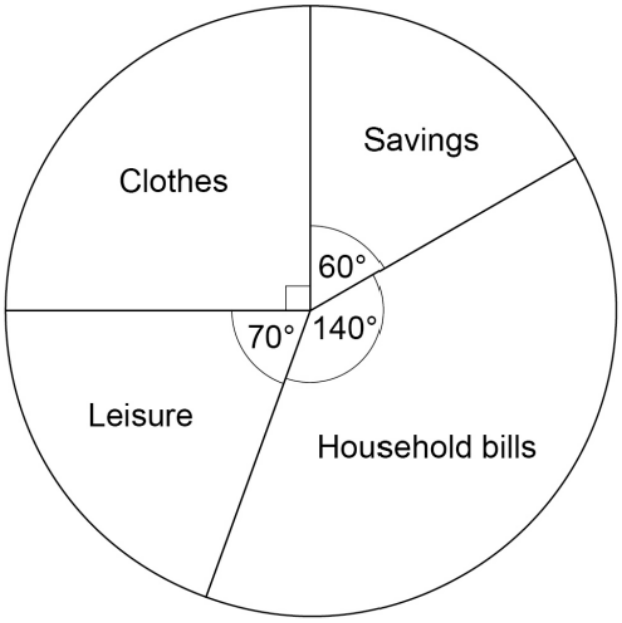
Type of package	Angle in pie chart (°)
Small Parcels	
Letters	
Large Parcels	

Workings

AQA

5.

Jake draws a pie chart to show how he will spend his income.



Jake spends £420 on **household bills**.

How much **more** does he spend on clothes than on leisure?

[4 marks]

Answer £ _____

Calculator Questions

Edexcel

1.

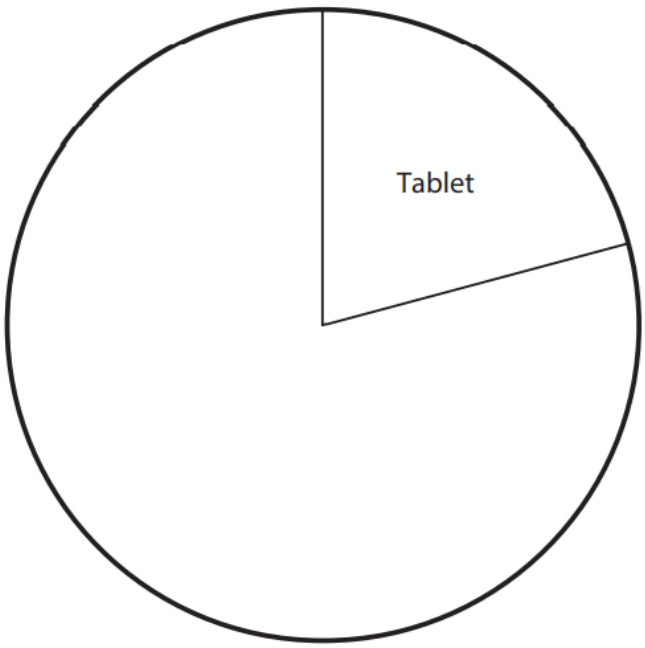
Jimmy works in a shop.
He has this information about the 72 items sold last week.

Item	Number sold	Angle size
Tablet	15	75
Phone	44	
Laptop	13	

Jimmy starts to display this information in a pie chart.

Complete the pie chart for Jimmy.

(3)



2.

The table gives some information about the number of visits to a gym last month.

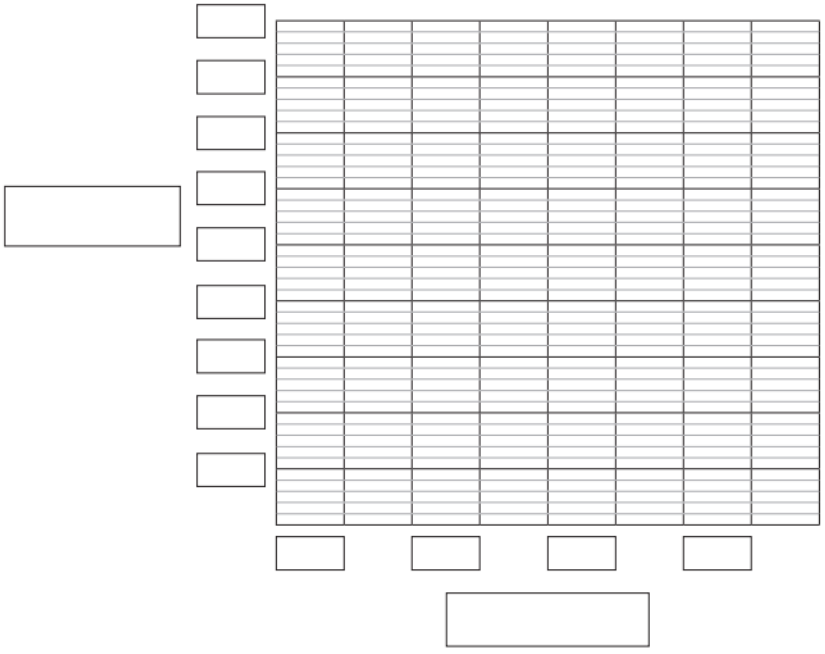
number of visits	tally	frequency
1 – 5	𝍸 𝍸	
6 – 10	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 |||	
11 – 15	𝍸 𝍸 𝍸 𝍸 ||	
more than 15	𝍸 𝍸 |	

(a) Complete the frequency column.

(1)

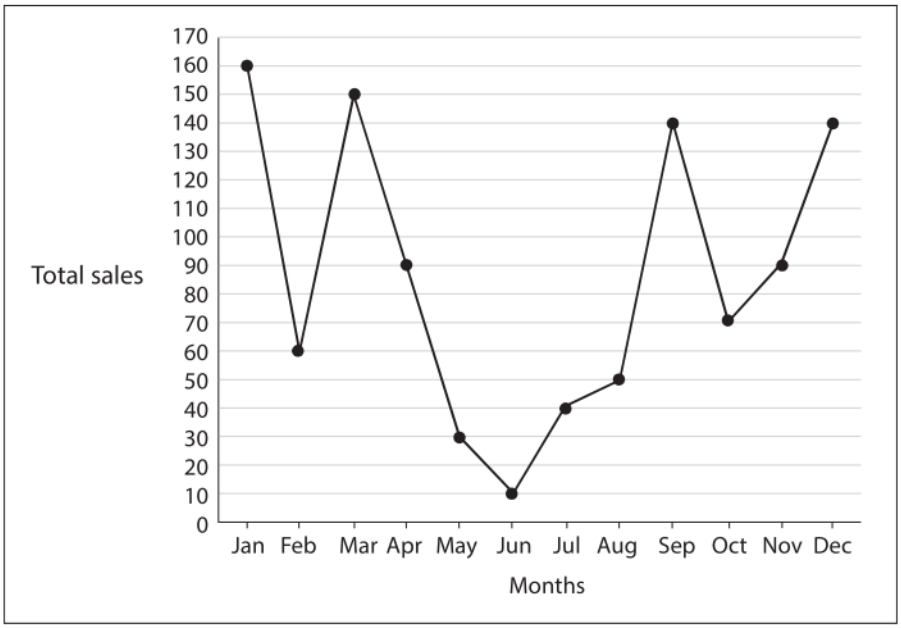
(b) On the grid, draw a suitable graph for this information.

(3)



3.

Kate has this information about the total monthly sales for a shop in 2018



Kate needs to put this information in a table.
The table must show the total sales for each quarter of the year.

quarter 1 (Jan to Mar)
quarter 2 (Apr to Jun)
quarter 3 (Jul to Sep)
quarter 4 (Oct to Dec)

Draw and complete a suitable table for Kate.

(3)

4.

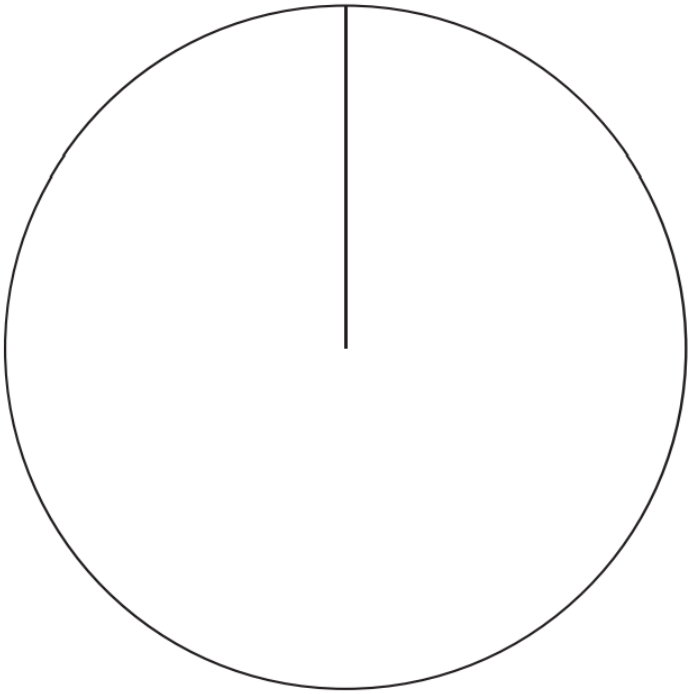
John is a milkman.

The table shows information about the types of milk John delivers each day.

type of milk	number	angle
skimmed	20	60°
semi skimmed	55	165°
whole	45	135°

Draw a pie chart to show this information
Remember to label the chart.

(3)



5.

Graham is the manager of a fast food restaurant.

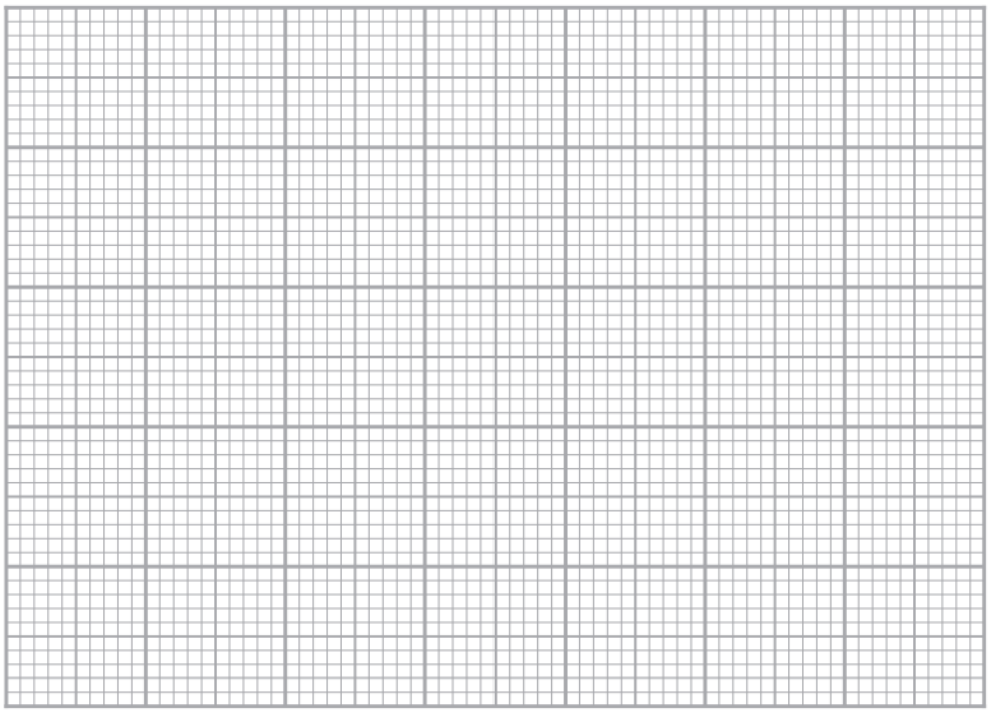
The table shows the amount of money lost due to food waste for five days.

	Mon	Tue	Wed	Thu	Fri
amount of money (£)	190	250	210	345	400

Graham wants to draw a graph to show the amount of money lost due to food waste.

Draw a suitable graph for Graham.

(3)



NCFE

6.

Every year, local authorities in England estimate how many people are sleeping rough in their area.

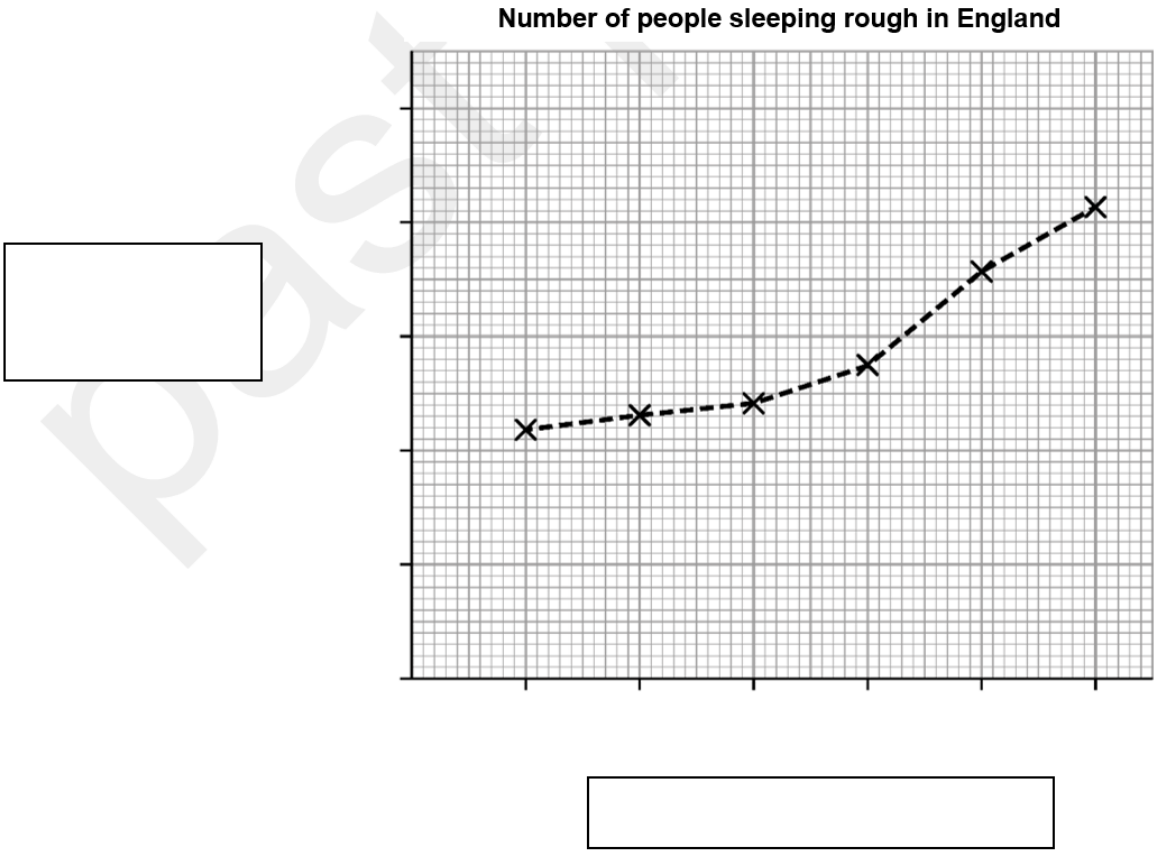
The estimates for England over the last few years are shown in this table:

Year	Estimated number of people sleeping rough in England
2011	2181
2012	2309
2013	2414
2014	2744
2015	3569
2016	4134

The data is represented in this line graph. The axes are incomplete.

Complete the line graph.

[3 marks]



past paper

7.

A community group raises money to help people who sleep rough.

Volunteers pack shopping bags at a local supermarket and ask shoppers for donations.

The table shows the numbers of volunteers who packed bags on 32 Saturdays in 1 year.

4	**5**	**2**	**4**	**6**	**5**	**5**	**4**
2	**2**	**1**	**5**	**5**	**3**	**4**	**3**
3	**4**	**2**	**2**	**5**	**2**	**1**	**0**
3	**4**	**4**	**4**	**3**	**1**	**1**	**5**

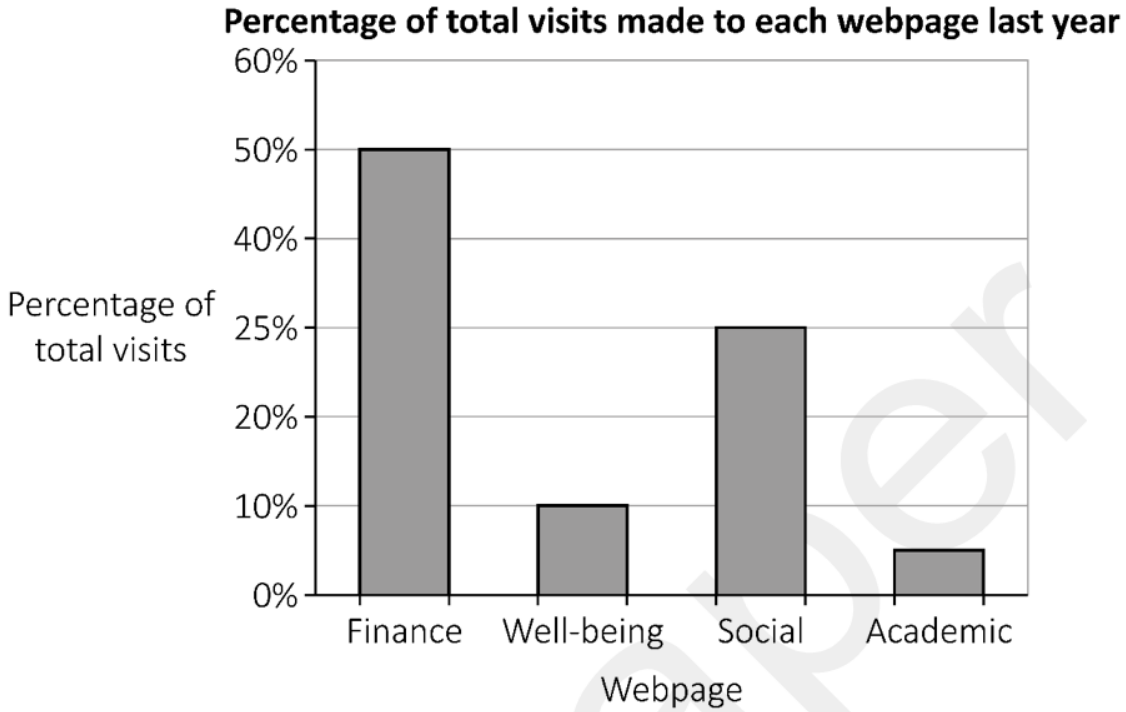
Use the data to complete this frequency table.

[2 marks]

Number of volunteers	Frequency
0	1
1	4
2	
3	
4	
5	7
6	1
Total	**32**

8.

Joy draws this bar chart to represent the data for last year:



Give **two** reasons why this bar chart is inaccurate.

[2 marks]

1.

2.

past paper

9.

Simon looks at the weather forecast in Paris.

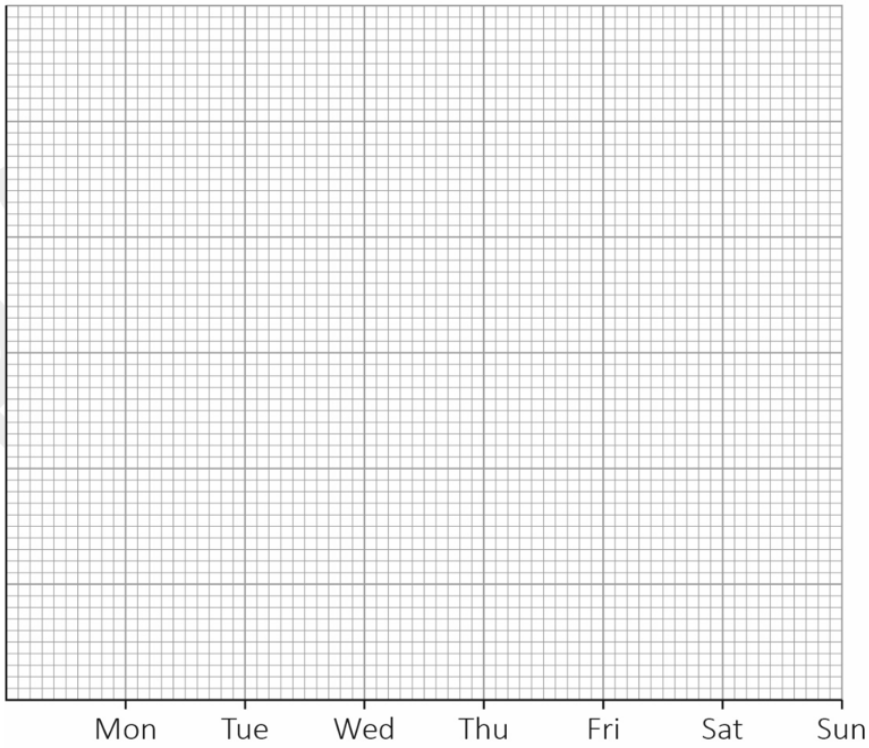
The table shows a 7-day forecast:

Day	Forecast temperatures in °C for Paris
Mon	15
Tue	17
Wed	17
Thu	16
Fri	16
Sat	22
Sun	23

Draw a line graph to represent this data.

[4 marks]

Forecast temperatures in °C for Paris



Days of the week

10.

Some scientists think that climate change might increase the number of earthquakes.

Amena finds this information about the magnitude of some earthquakes.

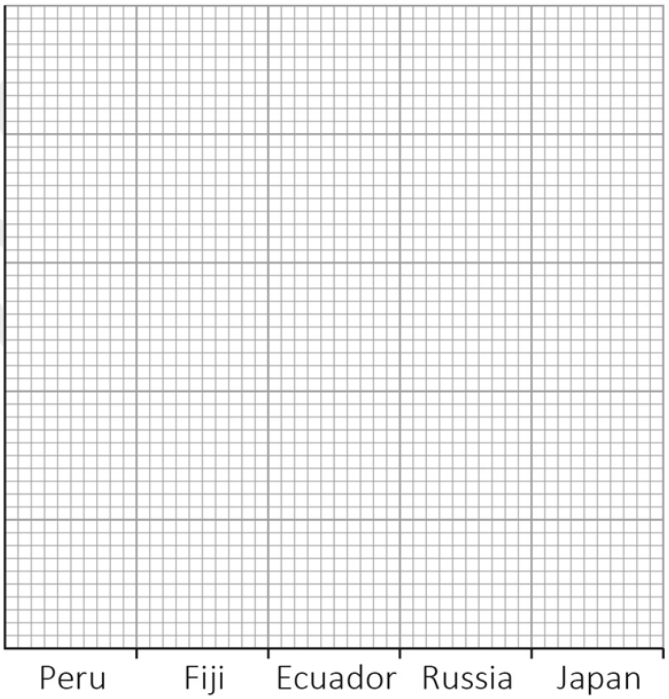
Magnitude of earthquakes	Location
8.0	Peru
8.2	Fiji
7.8	Ecuador
8.3	Russia
9.1	Japan

She needs to draw a bar chart.

Draw a bar chart for Amena.

[4 marks]

Magnitude of earthquakes



Location

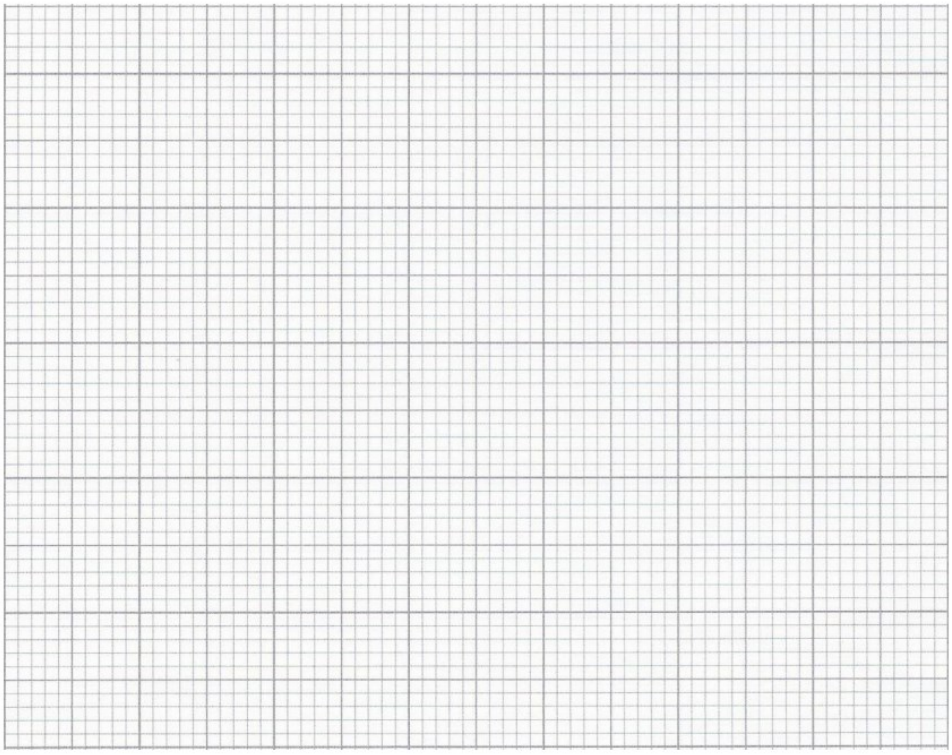
PAST PAPER

11.

This table shows the number of orders a sales person got in six months.

Month	Number of orders
January	150
February	155
March	170
April	160
May	180
June	200

Draw a line graph to show this information.



Explain what your graph shows about the number of orders.

Explanation

(5 marks)

12.

A school thinks their results are better than the national average.

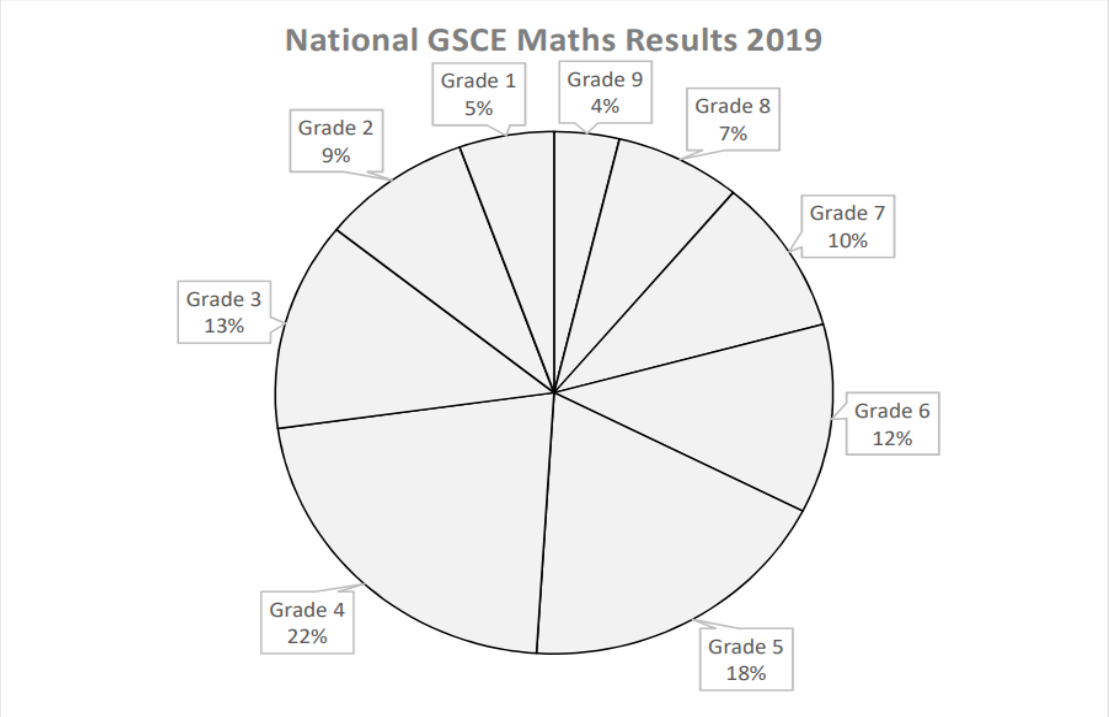
The school has a target for 65% of their students to achieve a Grade 4 or higher in their Maths GSCE.

A school governor uses this school table to check results.

School GSCE Maths Results 2019	
Grade	Number of Students
9 - Highest	7
8	11
7	18
6	22
5	27
4	55
3	27
2	22
1 - Lowest	11

She wants to compare her school's results with the national Maths GCSE results for Grade 4 and above.

She sees these national results.



She needs to write a report for the board of governors.

She says that the school has met its target **and** that its results are better than the national average.

Is the governor correct?
Explain your decisions. Show calculations to support your explanation.

Show all your working.

Target met? *(tick one box)* **Yes** ☐ **No** ☐

Better than national average? *(tick one box)* **Yes** ☐ **No** ☐

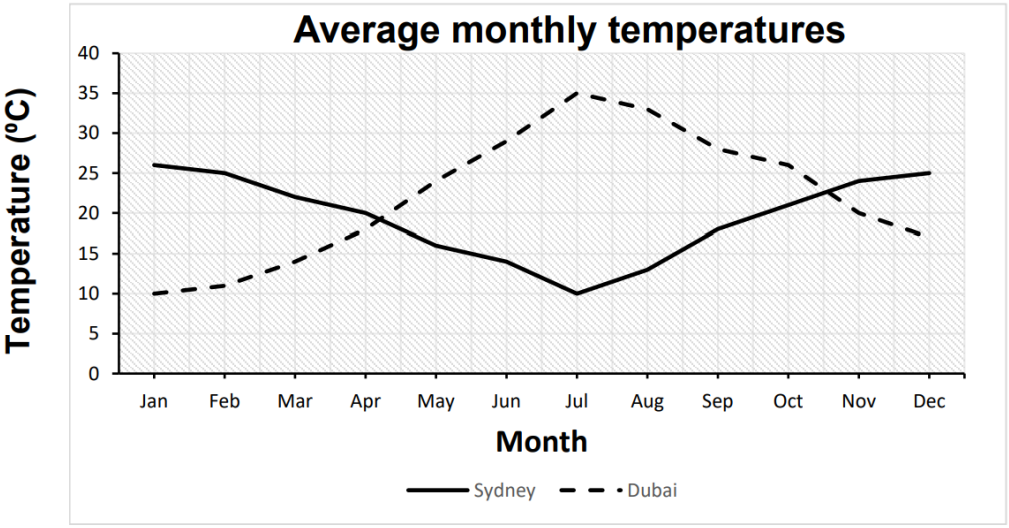
Explanation

(6 marks)

13.

This chart shows the average monthly temperatures of Sydney and Dubai.

What is the difference in the average monthly temperature of Sydney and Dubai in July?



_____ °C

(1 mark)

14.

A parent wants a car seat for his child who is 36 months old.

He needs a seat that is front facing and uses a harness.

He looks at this table.

Car Seats					
		Features			
Child's age	**Seat type**	**Lie Flat**	**Front Facing**	**Rear Facing**	**Uses harness**
From birth - 12 months	Baby	✓	X	✓	✓
6 months – 4 years	Toddler A	X	X	✓	✓
	Toddler B	X	✓	✓	✓
3.5 years – 12 years	Child A	X	✓	✓	✓
	Child B	X	✓	X	X

Which seat type should the parent buy?

Explain your decision.

Which seat type should the parent buy?

_____

Explanation

(2 marks)

15.

A salesperson must drive from Bristol to attend a meeting in Nottingham at 10am.

This table shows distances in miles between different places.

City	Bristol	Nottingham	Derby
Bristol		140	135
Nottingham	140		15
Derby	135	15	

He works out he needs to leave Bristol at 9am.

Is his calculation sensible?
Explain your answer.

Is his calculation sensible? *(tick one box)* **Yes** ☐ **No** ☐

Explanation

(1 mark)

16.

A principal needs to report to the governors how absence rates have changed over the last four years.

She needs to work out last year's percentage absence.

College absences	
Total absences (days)	**Total possible attendance (days)**
948	39 500

What percentage of the total days were the students absent for last year?

Space for working

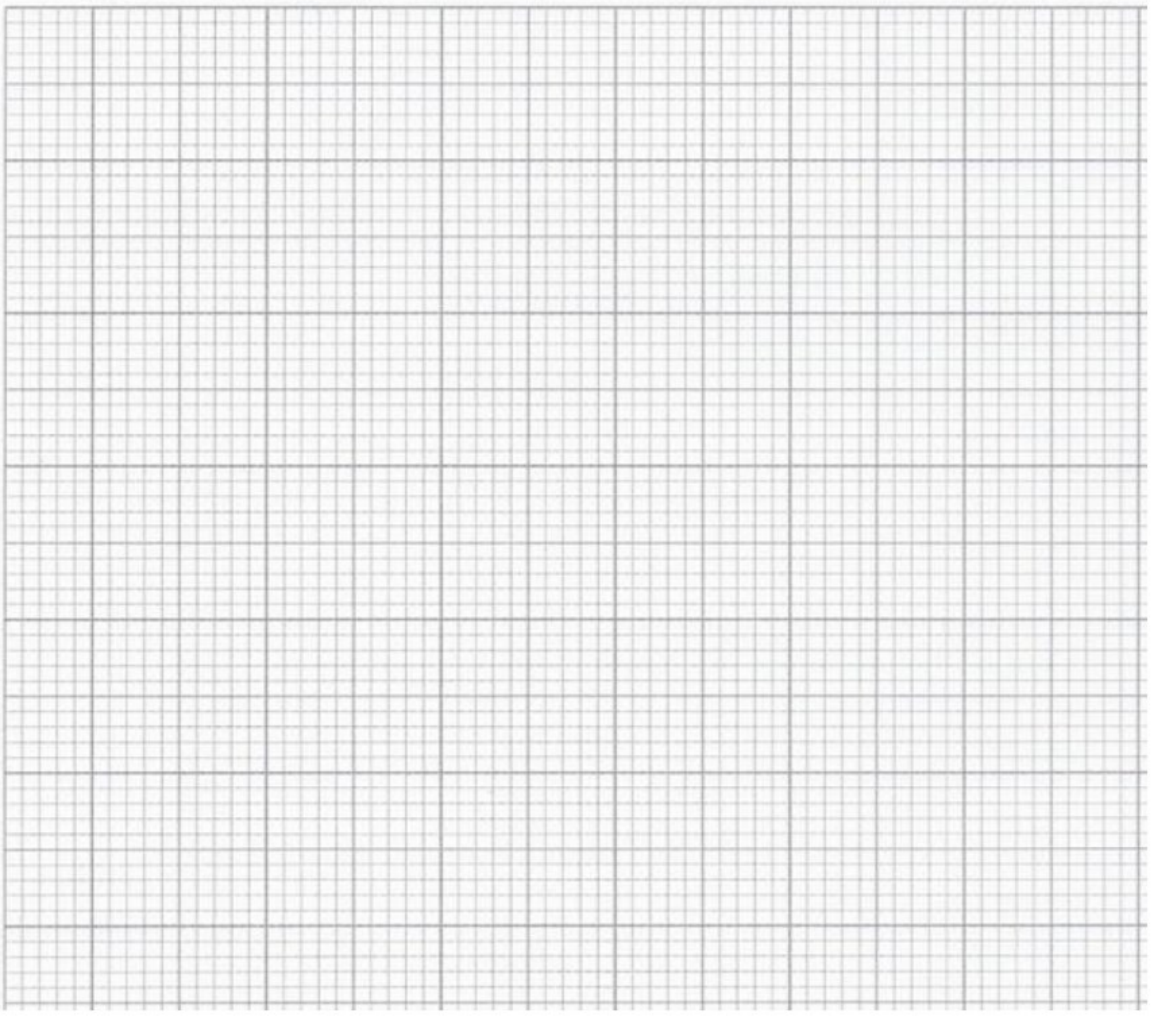
Percentage absence _____ **%**

She wants a chart for her report.

She finds the following extra information.

	Percentage of days absent
4 years ago	6.8%
3 years ago	5.6%
2 years ago	3.2%

Draw a chart or graph for the principal's report.



(6 marks)

Highfield

17.

The table below shows the number of visitors to Highfield Castle last week.

Day	Number of visitors
Monday	165
Tuesday	195
Wednesday	135
Thursday	150
Friday	

On Friday there were 20% more visitors than there were on Thursday.

Show your working out and then draw a chart on the graph paper to show the number of visitors during each day last week. ***(6 marks)***

18.

This is the 6th year that the show has taken place.

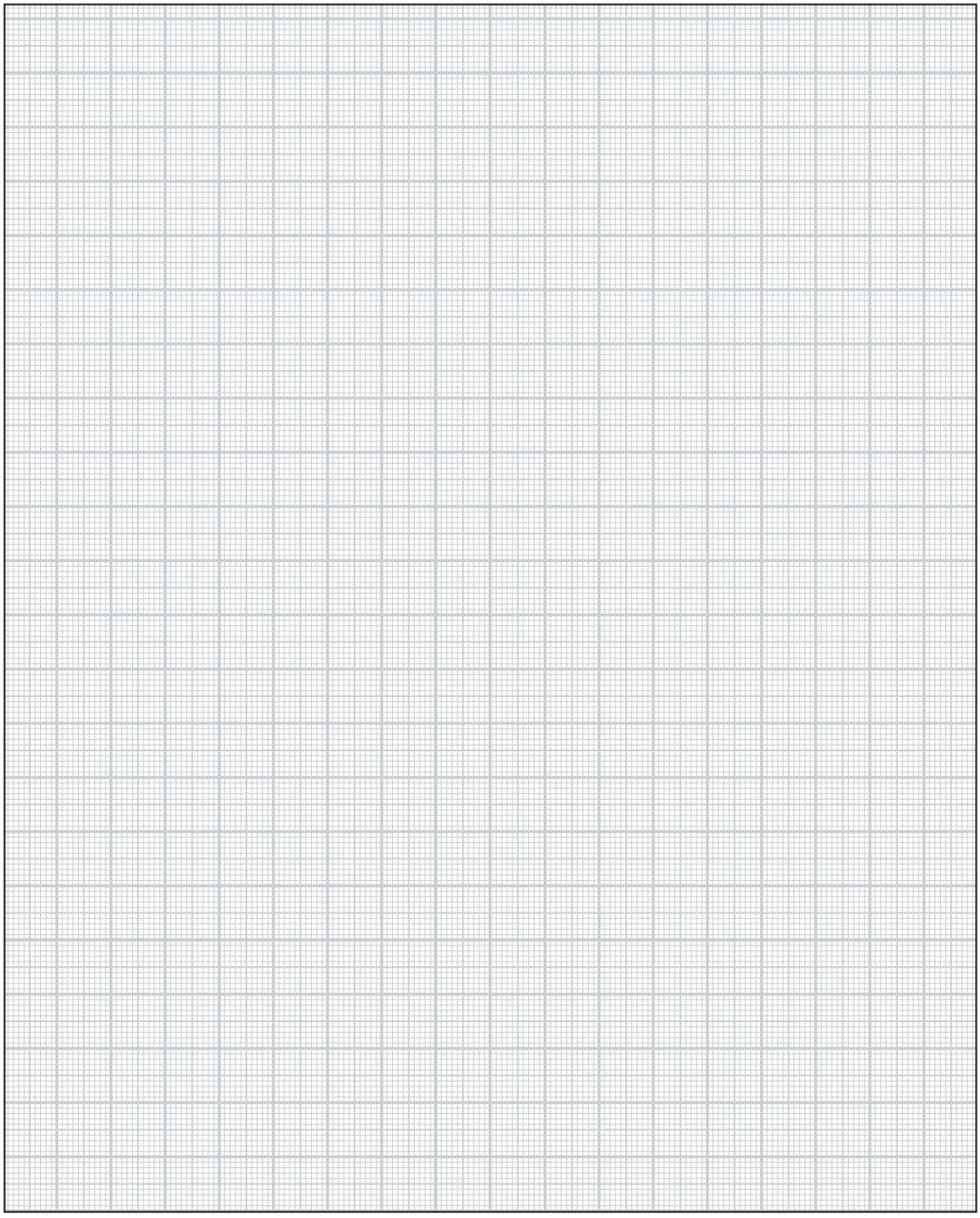
The table below shows the attendance figures at the show for the last 5 years.

Year	Attendance
1	3200
2	3700
3	4150
4	1950
5	4500
6	

In year 6 the attendance is 15% greater than year 5.

Show your working out and draw a chart to show the attendance for the 6 years.

(6 marks)



19.

Ben and Jo want to buy a house.

An estate agent tells Ben and Jo about the houses in their area.

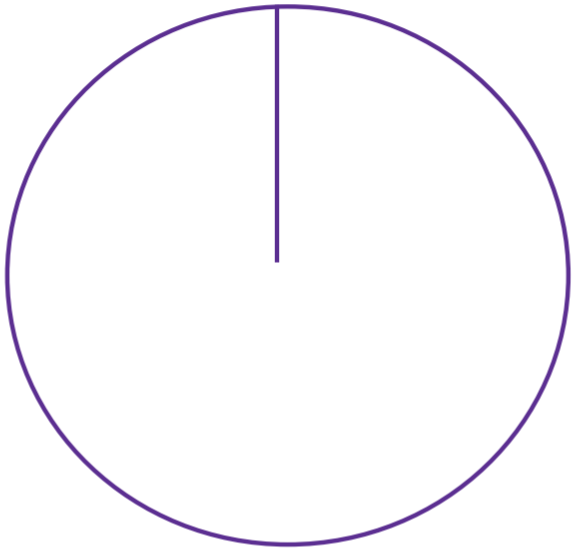
15% of the houses have 1 bedroom.
55% of the houses have 2 bedrooms.
30% of the houses have 3 or more bedrooms.

The estate agent wants to display these figures in a chart to compare the proportion.

Create a pie chart below to compare the proportion of houses with 1 bedroom, 2 bedrooms and 3 or more bedrooms.

Draw your chart and show any workings in the box below.

(5 marks)



Workings

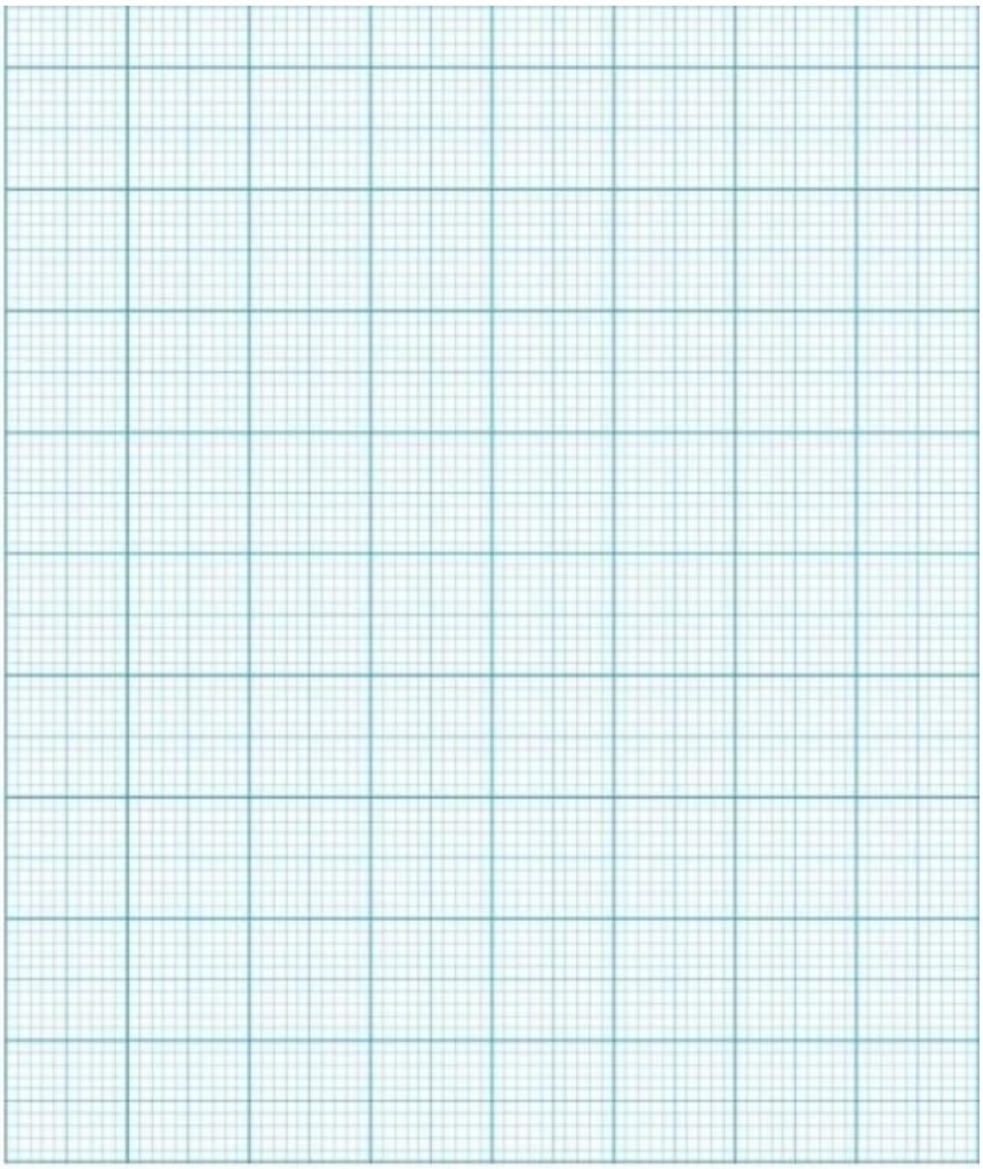
Open Awards

20.

The table below shows sales of laptops over a 6-month period.

Sales of laptops						
Months	Jan	Feb	Mar	Apr	May	June
Number of laptops sold	28	144	82	126	94	172

Draw a bar chart to show the sales of laptops over the 6-month period. (3 marks)



21.

Rory works for a restaurant.

One week, the restaurant runs a special offer from Wednesday to Saturday.

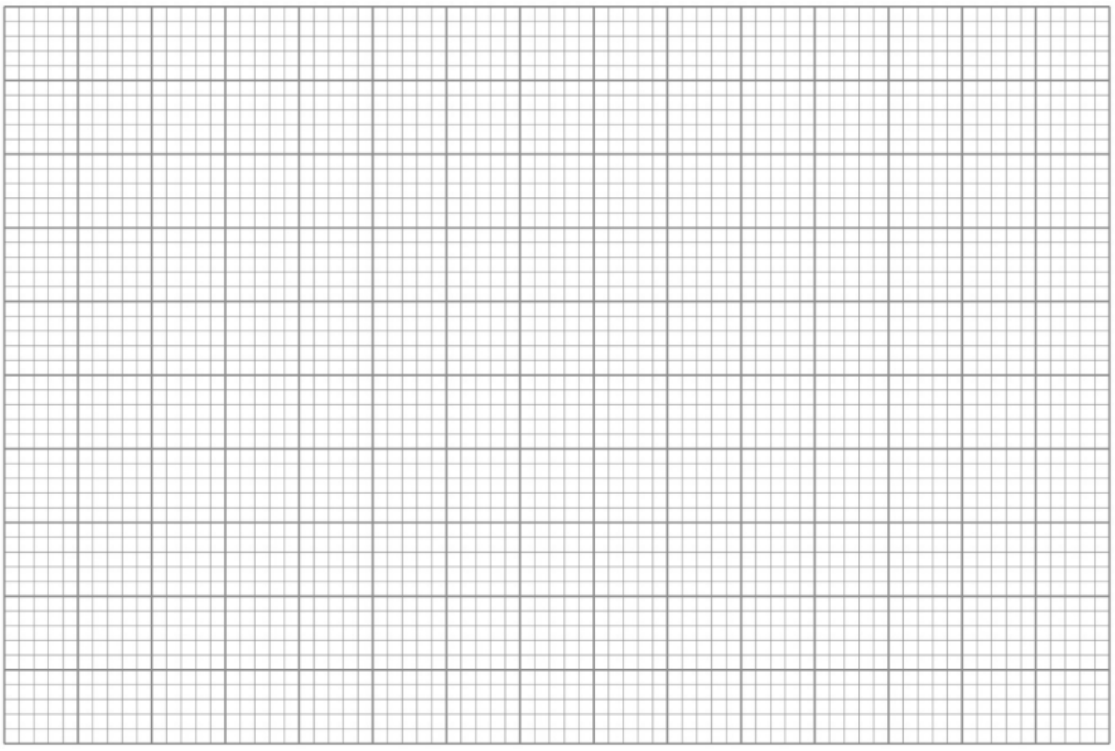
The table shows the income from sales of drinks for the four days.

	Income from drinks
Wednesday	£800
Thursday	£1000
Friday	£1400
Saturday	£700

On the grid below, draw a suitable chart showing the income from drinks.

[4 marks]

Income from Drinks

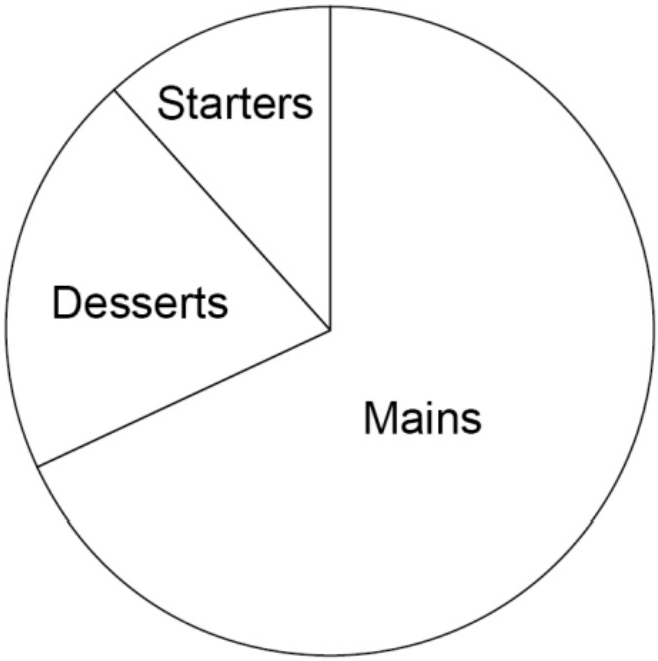


22.

The income from food comes from starters, mains and desserts.

The pie chart represents the income from food during the special offer.

Income from food



In total, Rory wants $\frac{1}{3}$ of the income from food to come from starters and desserts.

Has this happened during the special offer?
You **must** show your working.

[3 marks]

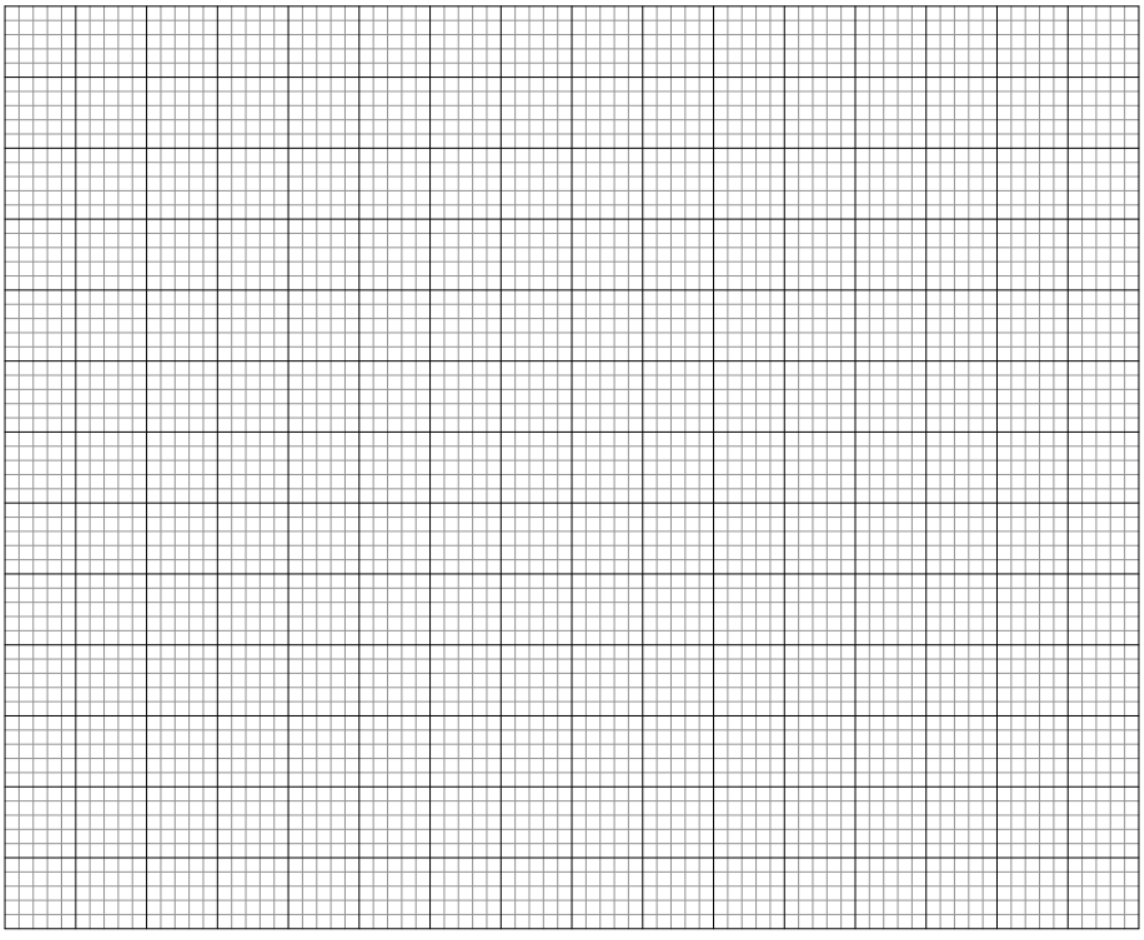
23.

The table shows the number of climbers that visited the climbing centre on Monday to Friday one week.

	Monday	Tuesday	Wednesday	Thursday	Friday
Adults	18	15	12	21	18
Children	23	21	22	23	20

Show this information on a suitable diagram.
Use the grid below.

[5 marks]



24.

Melissa works in a charity shop.

People donate clothing to the shop.

Some of the clothing is sold in the shop and some is sold for recycling.

Melissa keeps a record of the clothing sold in the shop one month.

Item of clothing	Tally	Frequency
Shirt	𝍸 𝍸 𝍸	
Coat	𝍸 ||	
Jumper	𝍸 𝍸 𝍸 𝍸 |||	
Dress	𝍸 𝍸 |	

Melissa says,

"More than a quarter of the items sold were shirts."

Is Melissa correct?

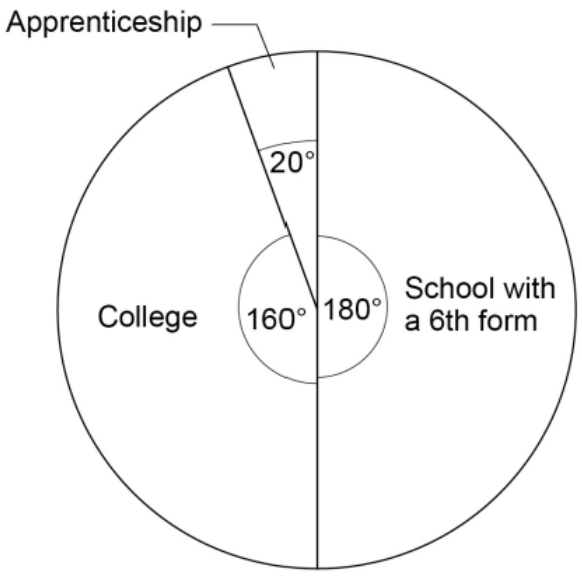
You **must** show your working.

[5 marks]

25.

Students leave a school at the end of Year 11

The pie chart shows what students did when they left the school last year.



90 students went to a school with a 6th form.

How many **more** students went to college than started an apprenticeship?

[4 marks]

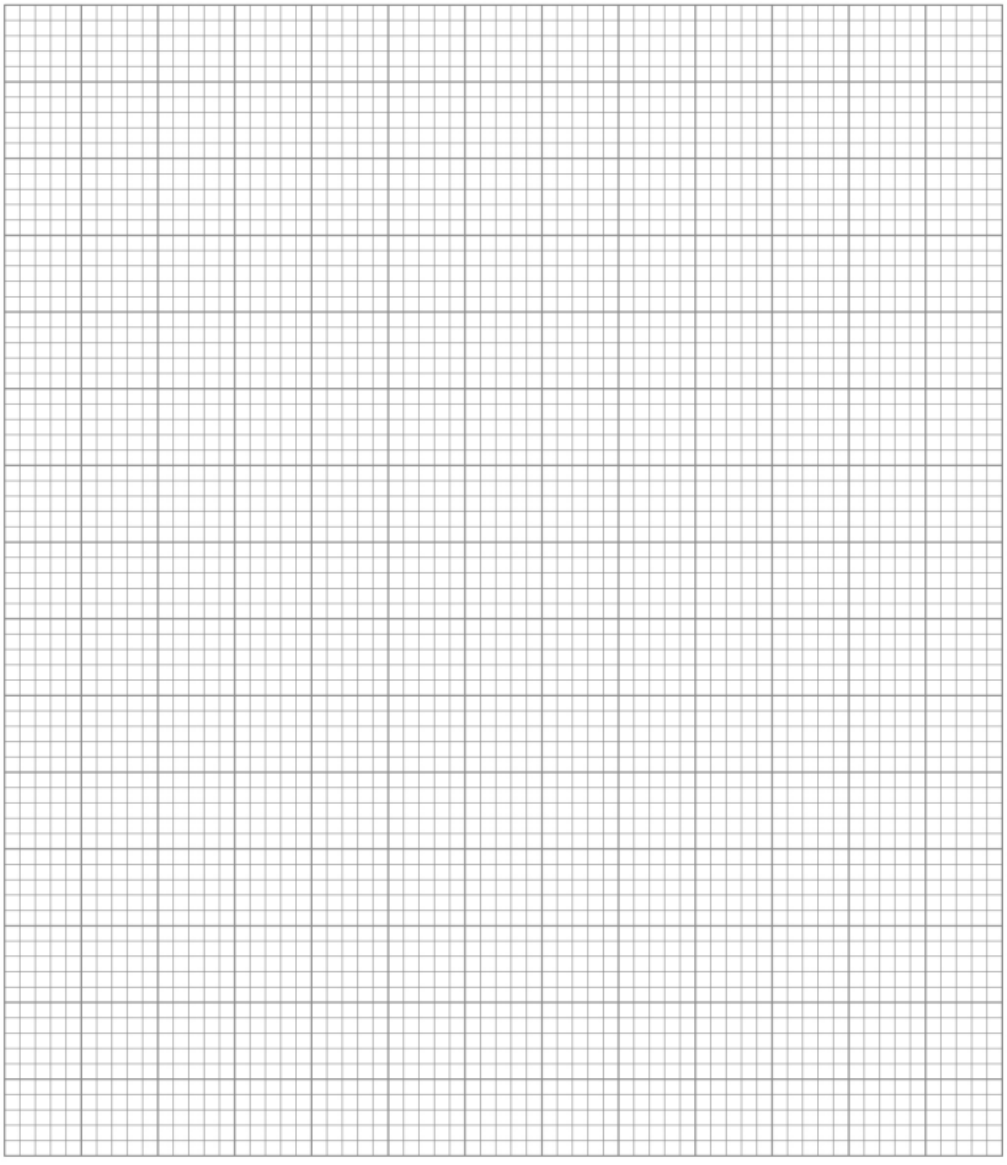
Answer _____

26.

Jack is planning a holiday to Turkey.

He finds this information about average temperatures in Turkey.

Month	Apr	May	June	July	Aug	Sep
Temperature (°C)	16	20	25	28	27	24

On the grid below, draw a suitable diagram to show this information.

[4 marks]