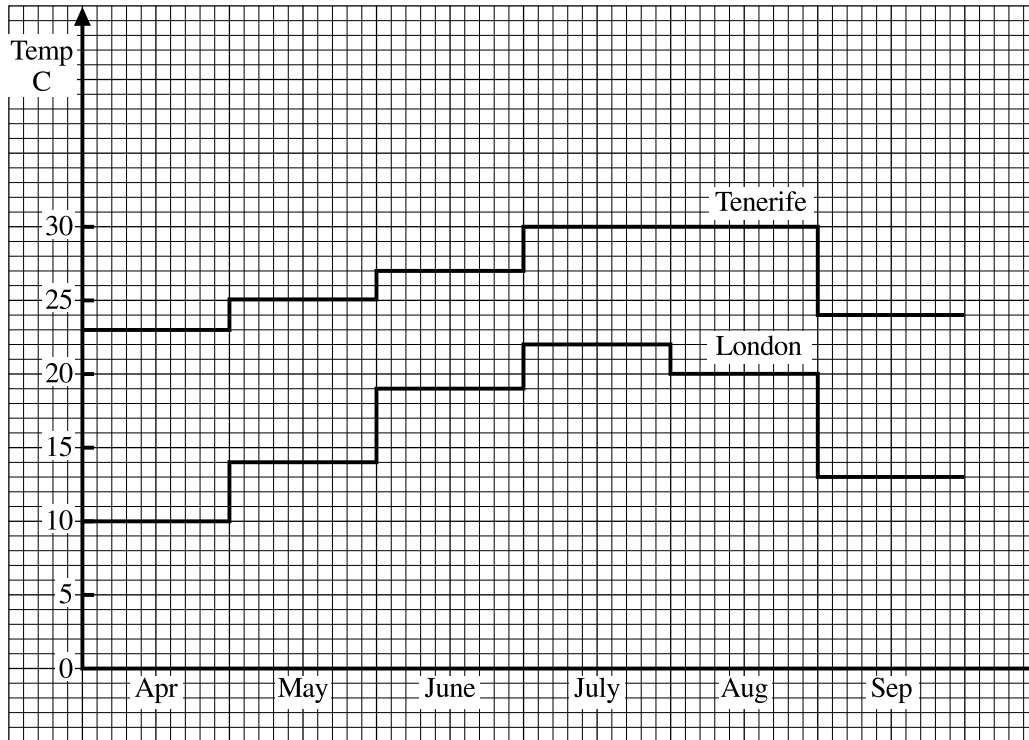


Interpreting Data GCSE Foundation

Question 1



The diagram shows the average midday temperature in London and in Tenerife during the summer months.

- During which months is the average midday temperature normally the highest in Tenerife? **(1 mark)**
- During which month is there the greatest difference between the average midday temperature between London and Tenerife? **(1 mark)**
- Write down the average midday temperature for London in May. **(1 mark)**
- Work out the mean average midday temperature for June to August in Tenerife. **(2 marks)**

You can exchange £1 for 189 pesetas in Tenerife.
A large bottle of sun lotion costs 1375 pesetas.

- Change 1375 pesetas into pounds and pence. Give your answer correct to the nearest penny. **(3 marks)**

Question 2

The table below shows the monthly payment for an insurance scheme.
The payments depend on the age at which a person starts paying.
There are two rates, Standard Rate and Discount Rate.

Age	Monthly Payments per Person	
	Standard Rate in pounds	Discount Rate in pounds
0 - 16	7.20	6.12
17 - 19	12.60	10.71
20 - 39	17.00	14.45
40 - 59	23.40	19.89
60 - 74	41.40	35.19
75 and over	84.80	72.08

Alison is aged 17. She pays the Standard Rate.

- (a) i) Write down Alison's monthly payment.
ii) Work out the total amount Alison will pay in a year.

Mr Masih pays at the Discount Rate.

He pays £19.89 each month.

If he were one year older, he would pay £35.19 each month.

- (b) How old is Mr Masih?

The standard monthly payment for an insurance scheme for Tom is £7.20.

This is reduced for the Discount monthly payment to £6.12.

- (c) Work out the percentage reduction.

Question 3

There are 50 pupils in each of the groups, Year 9, Year 10 and Year 11 at Lucea High School.

A survey was carried out to find how many pets these pupils owned.

The results are shown in the table below.

Number of pets	Year 9	Year 10	Year 11
0	2	5	32
1	29	22	11
2	14	19	6
3	5	4	1
4	1	0	0

- (a) How many pupils in Year 10 own no pets?
- (b) How many of the pupils own exactly 2 pets?
- (c) What is the most common number of pets owned by pupils?
- (d) Which year group owns the least number of pets? Use the figures to explain your answer.

Question 4

9 different models of car were tested to see how long it took each car to travel 500 metres from a standing start. The times, together with the size of each engine, are shown in the table.

Model	A	B	C	D	E	F	G	H	I
Engine Size cc	1000	1200	1250	1400	1450	1600	1800	1950	2000
Time (seconds)	26	23	23	21	21	19	18	16	14

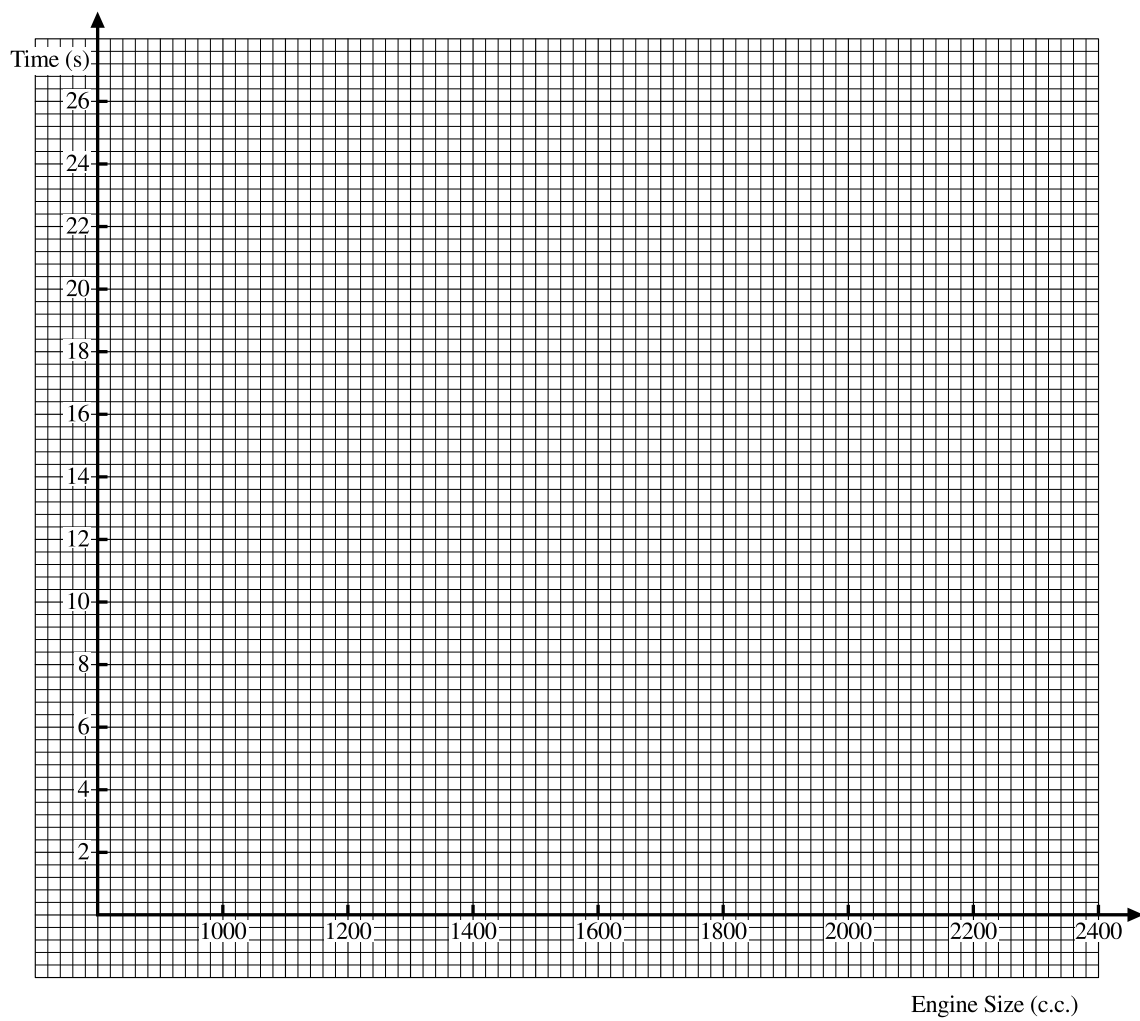
- (a) Plot these on the scatter diagram below. **(2 marks)**
- (b) Describe the relationship between the time it takes for a car to travel 500 metres and the size of its engine. **(1 mark)**
- (c) Use your scatter diagram to estimate the time taken to travel 500 metres by a car with an engine size of 1700 cc. **(1 mark)**

A model is selected at random from the above table.

- (d) Work out the probability it will have an engine size greater than 1400 cc. **(1 mark)**


Each model name is written on a different piece of paper. Each piece of paper is put in the same hat. A piece of paper is drawn at random from the hat.

- (e) Work out the probability that it will have the name of a model that has an engine size greater than 1400 cc as well as a time less than 18 seconds. **(1 mark)**



Question 5

The table below shows part of a train timetable.

Mondays to Fridays										
London Paddington	1400	1500	1600	1700	1730	1800	1830	1900	2000	2100
Slough	1404	1454	—	—	1710	—	1802	1832	2004	2054
Reading 	1427	1525	1610	1710	1755	—	1857	1927	2027	2127
Swindon	1459	1554	1654	1752	1825	—	1934	1959	2059	2200
Bristol Parkway†	1527	1620	1720	1819	1852	1919	2002	2027	2127	2228
Newport	1549	1644	1743	1841	1914	1942	2024	2049	2149	2250
Cardiff Central	1606	1701	1800	1858	1931	1959	2041	2106	2206	2312
Bridgend	1626	1721	1820	1918	1951	2019	2101	2126	2226	2332
Port Talbot Parkway	1637	1732	1831	1929	2002	2030	2112	2137	2237	2343
Neath	1645	1740	1839	1937	2010	2038	2120	2145	2245	2351
Swansea	1655	1755	1855	1950	2020	2050	2135	2200	2300	0005
Carmarthen	1744	1904	1954	—	2113	2200	—	—	2348	—
Haverfordwest	1824	1946	—	—	—	2245	—	—	—	—
Milford Haven	1900	2002	—	—	—	2301	—	—	—	—
Fishguard Harbour	—	—	—	—	—	—	—	—	0049	—

(a) At what time should the latest train leave Newport?

A train arrives in Swindon at 1825.

(b) At what time should that train have left London?

Only one train goes to Fishguard Harbour.

(c) At what time should this train leave Cardiff Central?

Question 6

Here is an extract from a TV programme guide.

Time	BBC1	Time	ITV
5.20pm	News	5.20pm	Motor Sport
5.35pm	Tom & Jerry	5.40pm	Baywatch
5.50pm	Superman	6.30pm	You've been Framed
6.35pm	Dad's Army	7.00pm	Barrymore
7.05pm	The Other Half	7.55pm	News
7.45pm	National Lottery	8.10pm	The Big, Big Talent show
8.05pm	Dalziel & Pascoe		
9.40pm	News	9.05pm	Inspector Morse

(a) At what time does Dad's Army start?

(b) How long is the Baywatch programme?

James wishes to record Dalziel & Pascoe. He uses a new 3 hour tape to record the programme.

(c) How much time will be left on the video tape after he has recorded Dalziel & Pascoe? Give your answer in minutes.

Question 7

A travel agent has printed out details of holidays in August.

















Complex	Hotel	Children's Club	Price	
			7 nights	14 nights
Alcudia	Bahia	No	£489	£599
Alcudia	Pins	Yes	£299	£399
Alcudia	Siesta	Yes	£309	£379
Picafort	Tonga	No	£379	£569
S'illot	Arcos Playa	No	£249	£369
Sa Coma	Bougauvilla Park	Yes	£304	£389
Calas	Eurocalas	No	£329	£499
Santa Ponsa	Punta del Mar	No	£409	£419
Santa Ponsa	Jadin del Sol	No	£309	£419


- (a) Write down the name of the hotel at complex Picafort.
- (b) Which hotels have 7-night holidays for under £300?
- (c) Which hotels have 14-night holidays costing between £320 and £390, and also have a children's club?

Question 8

The diagram below is part of a pictogram.

The pictogram shows the number of lorries which crossed the North Sea by ferry during a week in 1996.

Monday	    
Tuesday	    
Wednesday	 
Thursday	   
Friday	

 = 100 Lorries

(a) How many lorries crossed the North Sea by ferry?

On the Friday 300 lorries crossed the North Sea by ferry.

(b) Complete the pictogram to show this information.

Question 9

Fred is conducting a survey into television viewing habits.
 One of the questions in his survey is
 "How much television do you watch?"
 His friend Sheila tells him that it is not a very good question.
 Write down two ways in which Fred could improve his question.

Question 10

50 pupils are going on an educational visit. The pupils have to choose to go to one of **the theatre** or **the art gallery** or **the science museum**.

23 of the pupils are boys.
 11 of the girls choose to visit the theatre.
 9 of the girls choose to visit the art gallery.
 13 of the boys choose to visit the science museum.

	Theatre	Art gallery	Science museum	Totals
Girls	11	9		
Boys			13	23
Totals	19		20	50

(a) Complete the table.

(b) How many of the girls choose to visit the science museum?

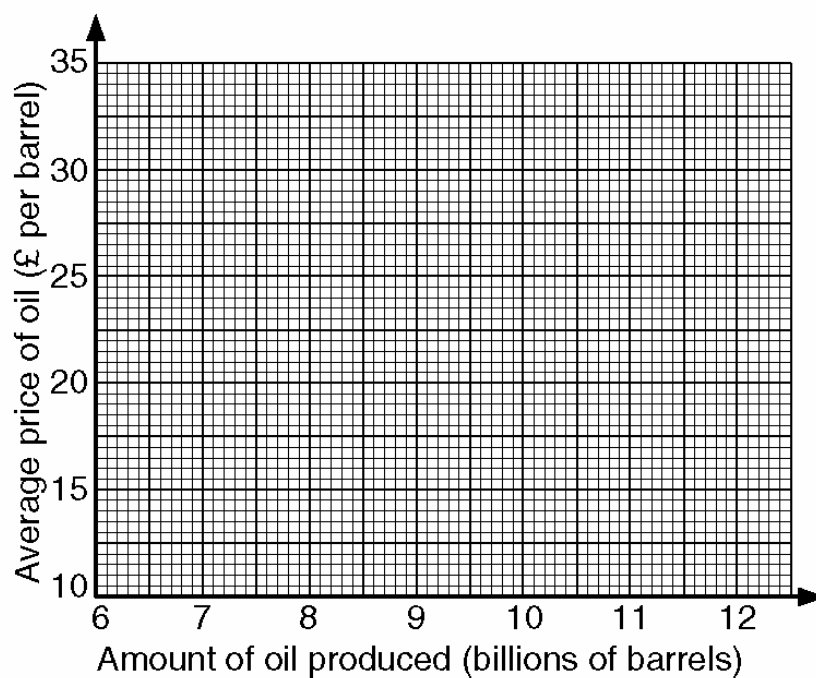
Question 11

Information about oil was recorded each year for 12 years.

The table shows the amount of oil produced (in billions of barrels) and the average price of oil (in £ per barrel).

Amount of oil produced (billions of barrels)	Average price of oil (£ per barrel)
7.0	34
11.4	13
10.8	19
11.3	12
9.6	23
8.2	3
7.7	30
10.9	12.5
8.0	28.5
9.9	13.5
9.2	26.5
9.4	15.5

- (a) Draw a scatter graph to show the information in the table.



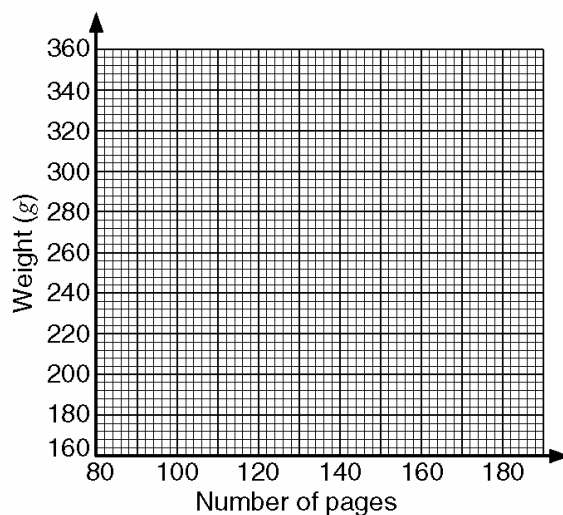
- (b) Describe the correlation between the average price of oil and the amount of oil produced.

Question 12

The table lists the weights of twelve books and the number of pages in each one.

Number of pages	Weight (g)
80	160
155	330
100	200
125	260
145	320
90	180
140	290
160	330
135	260
100	180
115	230
165	350

- (a) Draw a scatter graph to show the information in the table.

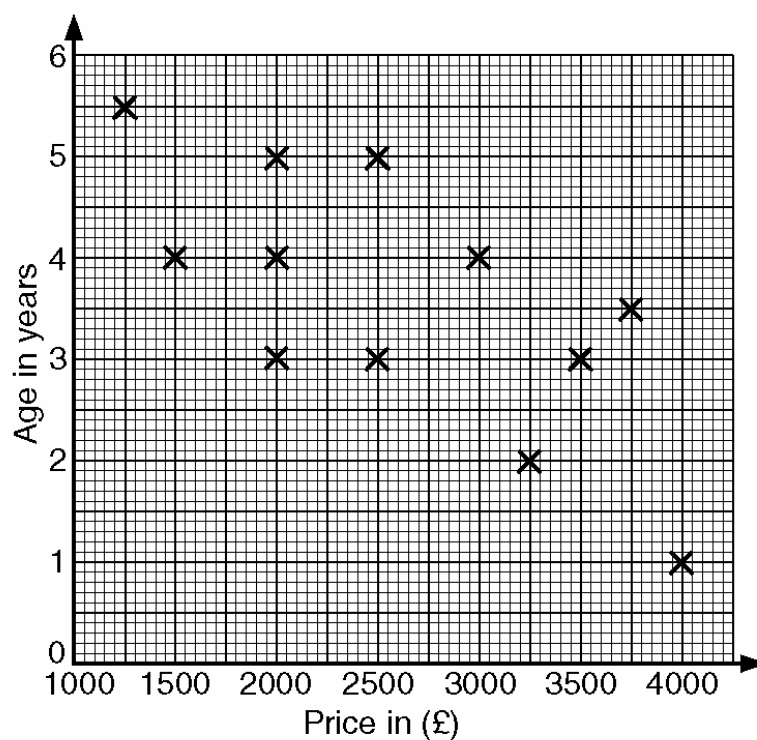


- (b) Describe the correlation between the number of pages in these books and their weights.

Question 13

Joe has twelve cars for sale.

The scatter diagram shows the ages and prices of the twelve cars.



Joe buys five more cars to sell.

The table lists the ages and prices of these cars.

Age in years	3	4	1	5	4
Price in £	3000	2500	3750	1500	2250

- Plot this information on the scatter graph.
- Describe the correlation between the ages of these seventeen cars and their prices.

Question 14

Here is a train timetable.

Place	Time of leaving
Crewe	08:00
Wolverhampton	08:40
Birmingham	09:00
Coventry	09:30
Rugby	09:40
Milton Keynes	10:10
London	10:45

- (a) At what time should the train leave Coventry? **(1 mark)**
- (b) How long should it take for the train to travel from Wolverhampton to Milton Keynes? **(2 marks)**

Question 15

The table shows the costs of posting a letter.

First Class	Weight not over	Second Class
26p	60g	20p
39p	100g	31p
49p	150g	38p
60p	200g	45p
70p	250g	55p
80p	300g	64p
92p	350g	73p
£1.04	400g	83p
£1.17	450g	93p
£1.30	500g	£1.05

First Class	Weight not over	Second Class
£1.60	600g	£1.25
£2.00	700g	£1.45
£2.15	750g	£1.55
£2.30	800g	
£2.55	900g	
£2.75	1000g	
£3.45	1250g	
£4.15	1500g	
£4.85	1750g	
£5.55	2000g	

A letter weighs 350 g.

(a) Write down the cost of sending the letter by first class post. **(1 mark)**

Three letters each weight 230 g. They are sent by second class post.

(b) Work out the total cost of sending the 3 letters. **(2 marks)**

One letter weighs 1200 g. Another letter weighs 1 kilogram.

You cannot send a letter which weighs more than 750 g by second class post.

(c) Work out the total cost of sending the two letters. **(2 marks)**

Question 16

Here is part of a bus timetable.

Bolton ---- Walkden --- Manchester

Mondays to Fridays

Bolton, Bus Station					0705		
Farnworth, King Street		0630		0654	0724	0739	
New Bury, Tennyson Road		0636		0700	0730	0745	
Little Hulton, Spa Hotel		0642		0706	0736	0751	
Little Hulton, Cleggs Ln		0646		0711	0741	0756	
Walkden Centre	0635	0652	0702	0717	0747	0802	
Worsley, Court House	0612	0642	0659	0711	0726	0756	0811
Monton Green	0618	0648	0707	0719	0734	0804	0819
Eccles, College Croft	0625	0655	0715	0727	0742	0812	0827
Manchester, Cannon St	0646	0722	0742	0754	0809	0839	0854

A bus is due to arrive at Manchester, Cannon St at 0809.

(a) At what time should this bus leave Farnworth, King Street?(**1 mark**)

Only one bus starts from Worsley Court House.

(b) At what time should this bus arrive at Manchester, Cannon St? **(1 mark)**

A bus leaves Bolton Bus Station at 0705.

(c) How long should it take to travel to Worsley Court House on this bus? **(2 marks)**

Question 17

Janet goes on holiday to Spain.

The exchange rate is $\text{£}1 = 230.6$ pesetas.

She changes $\text{£}150$ into pesetas.

(a) How many pesetas should Janet get?

(2 marks)

Janet comes back home.

She changes 550 pesetas back into pounds.

The exchange rate is the same.

(b) How much money should she get?

Give your answer to the nearest penny.

(2 marks)

Question 18

The table shows the numbers of students who took examinations in four different subjects in 1997 and 1998.

Subject	Number of students 1997	Number of students 1998
Religious Studies	2860	3358
Law	4389	4617
German	2007	2481
Statistics	1999	2491

- (a) Which of these subjects had the least number of students taking the exam in 1998? **(1 mark)**
- (b) How many more students took the Statistics exam in 1998 than in 1997? **(1 mark)**
- (c) Which of these subjects had the greatest increase in the number of students taking the exam from 1997 to 1998? **(2 marks)**

Question 19

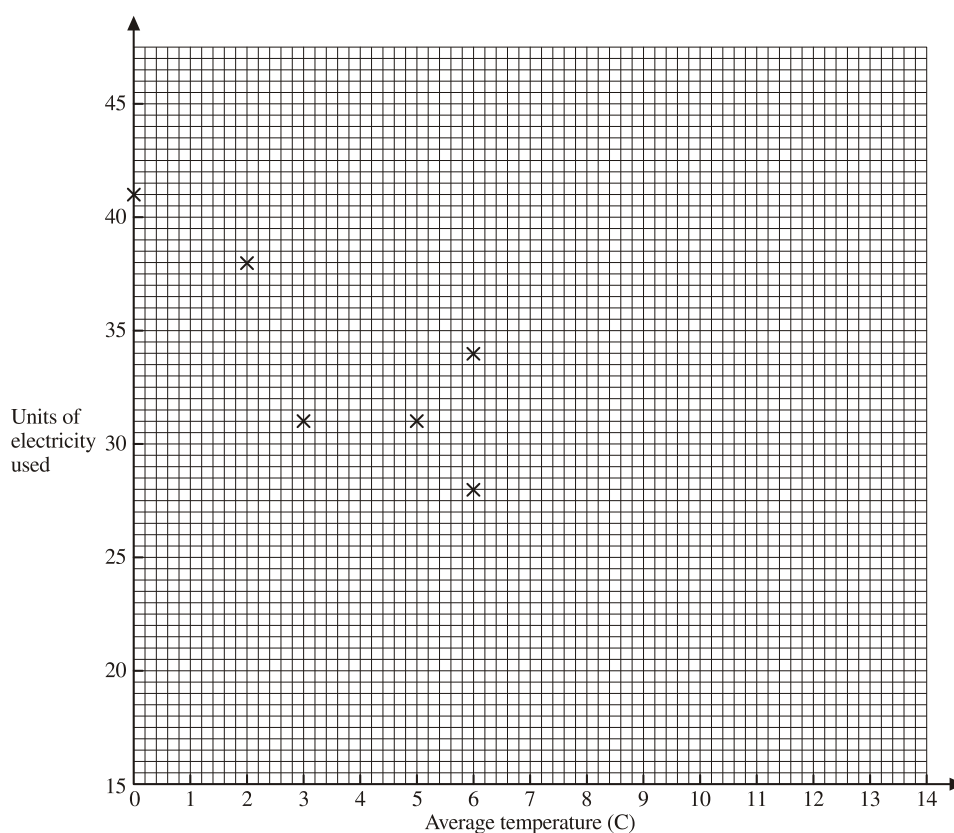
The table shows the number of units of electricity used in heating a house on ten different days and the average temperature for each day.

Average temperature (°C)	6	2	0	6	3	5	10	8	9	12
Units of electricity used	28	38	41	34	31	31	22	25	23	22

(a) Complete the scatter graph to show the information in the table.

The first 6 points have been plotted for you.

(2 marks)



(b) Describe the **correlation** between the number of units of electricity used and the average temperature.

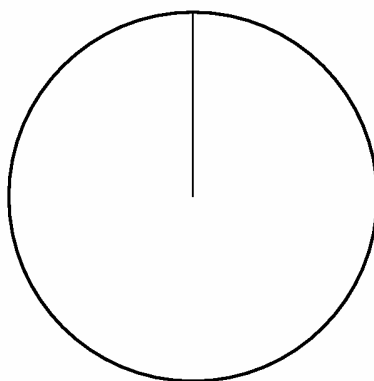
(1 mark)

Question 20

Here is a frequency table of the animals on Mr McDonald's farm

Animal	Frequency	
Hens	30	
Sheep	80	
Cows	104	
Pigs	20	
Geese	6	

- (a) Draw a fully labelled pie chart to show this data



An animal is chosen at random from Mr. McDonald's farm.

- (b) What is the probability that the animal
- i) is a pig
 - ii) is a horse
 - iii) has four legs?