

Scatter Diagrams GCSE Foundation

Question 1

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

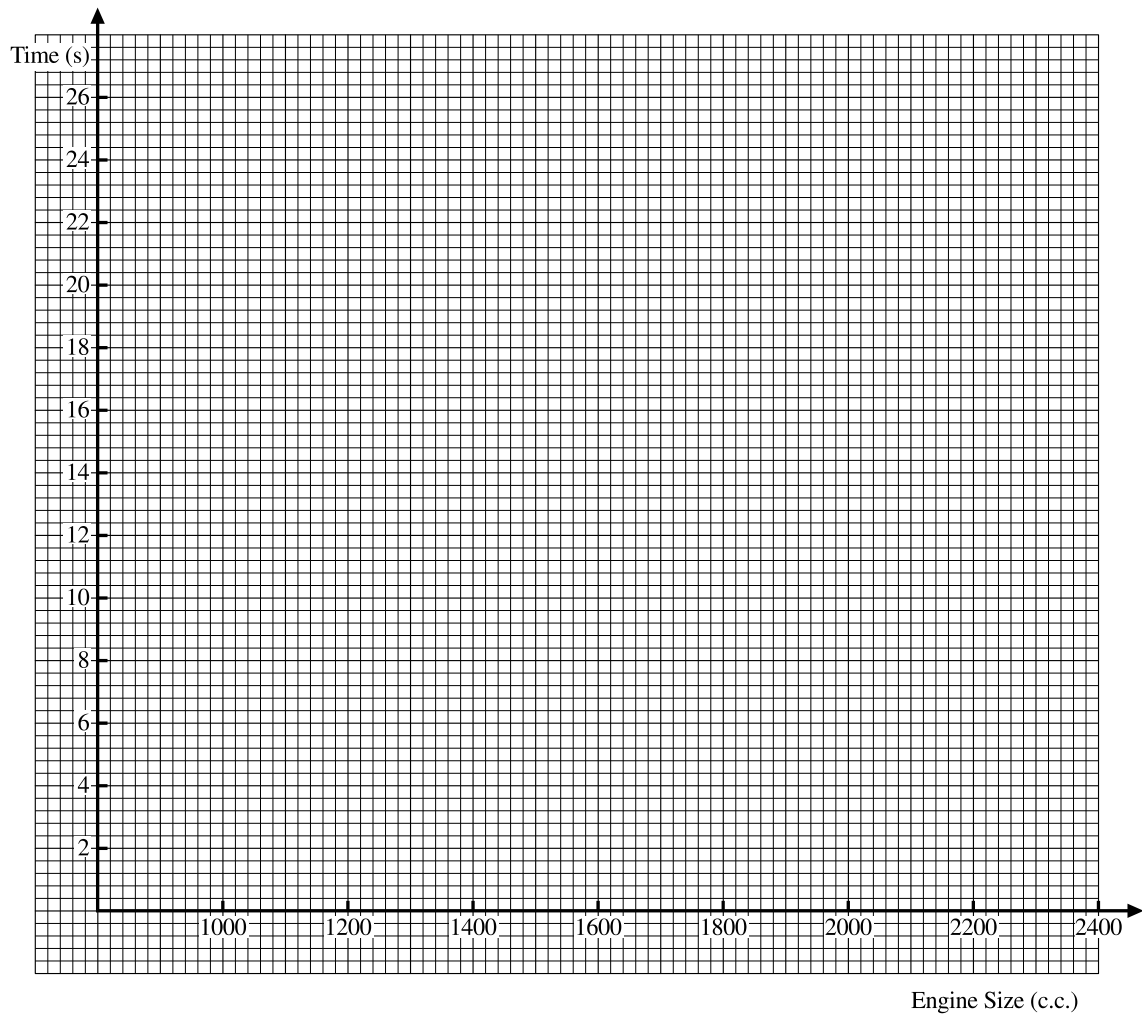
- (a) Plot these on the scatter diagram below. **(2 marks)**
- (b) Describe the relationship between the time it takes for a car to travel 500 metres and the size of its engine. **(1 mark)**
- (c) Use your scatter diagram to estimate the time taken to travel 500 metres by a car with an engine size of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

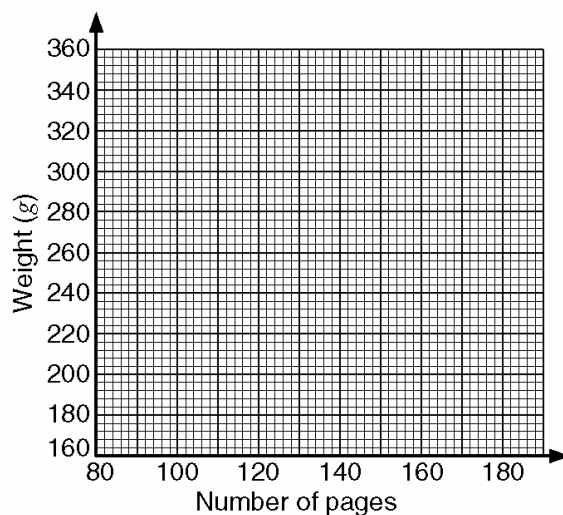


Question 2

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.

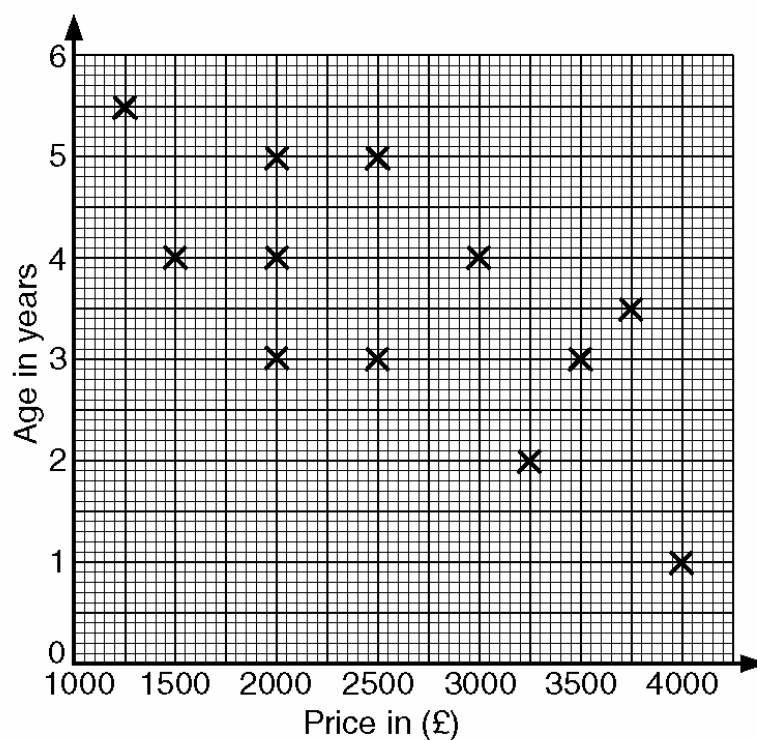


(b) Describe the correlation between the number of pages in these books and their weights.

Question 3

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 4

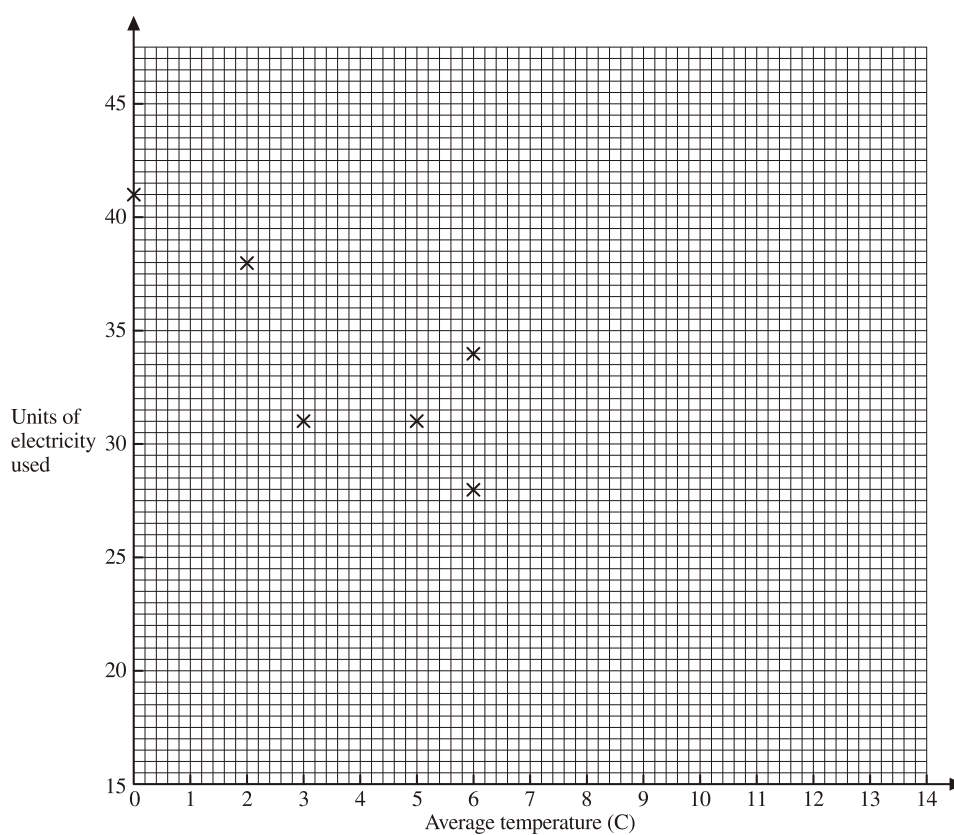
The table shows the number of units of electricity used in heating a house on ten different days and the average temperature for each day.

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)



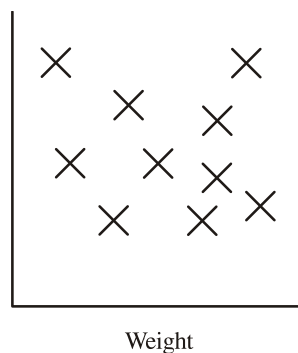
(b) Describe the **correlation** between the number of units of electricity used and the average temperature.

(1 mark)

Question 5

(a) Here is a scatter graph.

One axis is labelled “weight”.



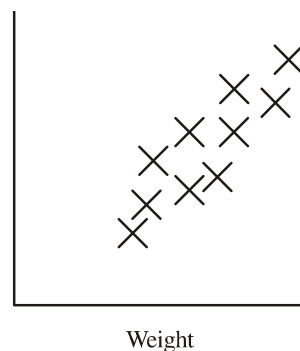
(i) For this graph state the type of correlation.

(ii) From this list choose an appropriate label for the other axis.

shoe size, length of hair, height, hat size, length of arm

(2 marks)

(b) Here is another scatter graph with one axis labelled “weight”.



(i) For this graph state the type of correlation.

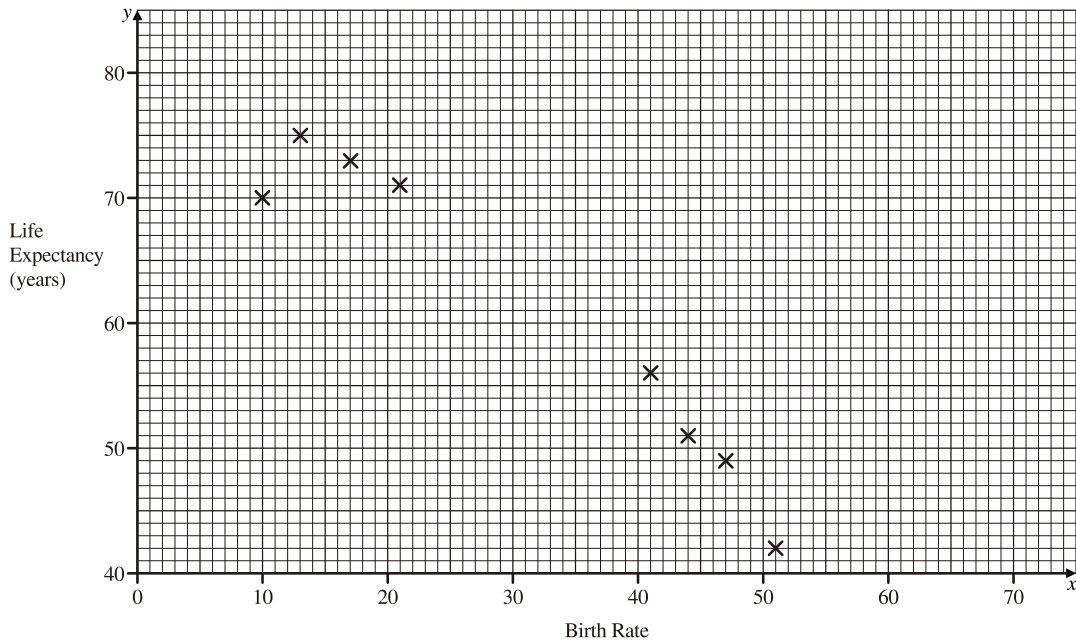
(ii) From this list choose an appropriate label for the other axis.

shoe size, distance around neck, waist measurement, GCSE Maths mark

(2 marks)

Question 6

The scatter graph shows information about eight countries.
For each country, it shows the birth rate and the life expectancy, in years.



The table shows the birth rate and the life expectancy for six more countries.

Birth Rate	25	28	30	31	34	38
Life Expectancy (years)	68	65	62	61	65	61

(a) On the scatter graph, plot the information from the table. **(2 marks)**

(b) Describe the relationship between the birth rate and the life expectancy. **(1 mark)**

The birth rate in a country is 42.

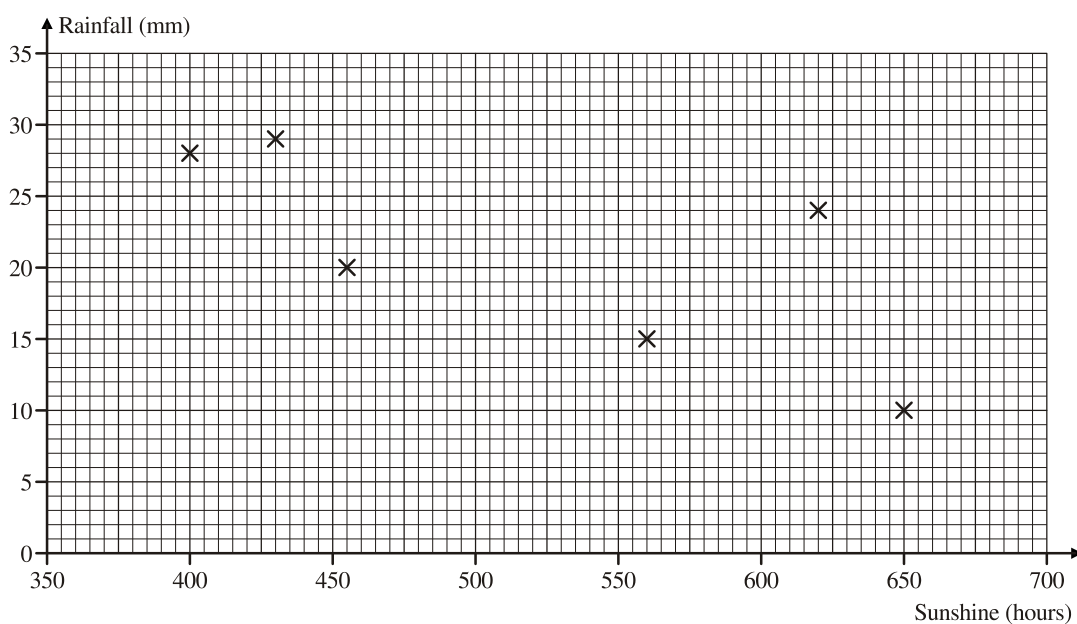
(c) Use your scatter graph to estimate the life expectancy in that country.

..... years
(1 mark)

Question 7

The table shows the hours of sunshine and the rainfall, in mm, in 10 towns during last summer.

Sunshine (hours)	650	455	560	430	620	400	640	375	520	620
Rainfall (mm)	10	20	15	29	24	28	14	30	25	20



The points for the first six results in the table have been plotted in a scatter diagram.

- (a) Plot the other four points to complete the scatter diagram. **(1 mark)**
- (b) Describe the relationship between the hours of sunshine and the rainfall. **(1 mark)**