

Scatter Graphs

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You must **not** use a calculator.

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. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

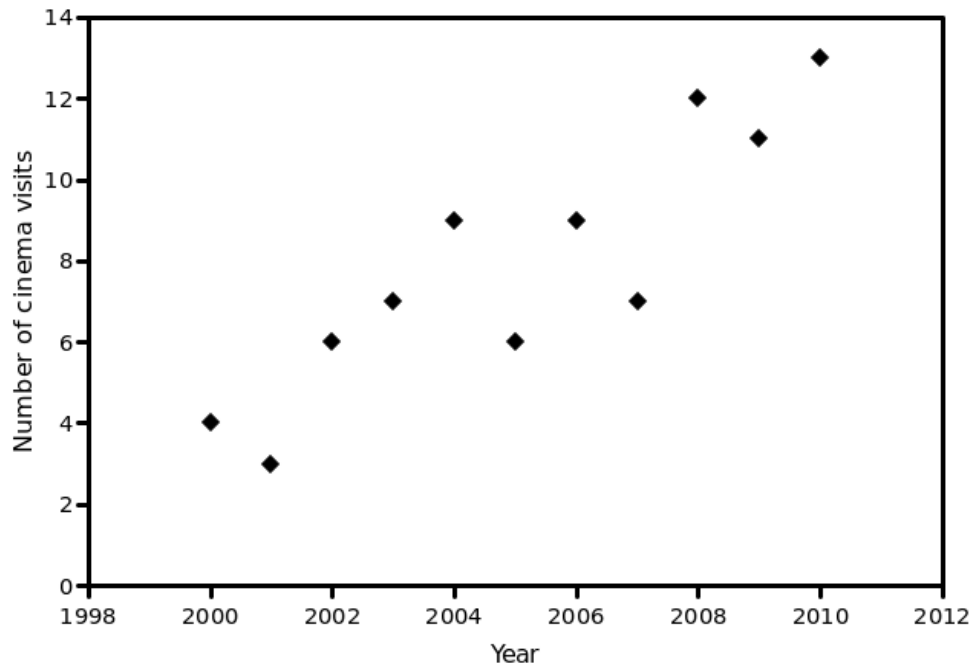
Advice

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

- 1 Draw a line of best fit for the data on the scatter graph below.

(Level 3)

[1 mark]

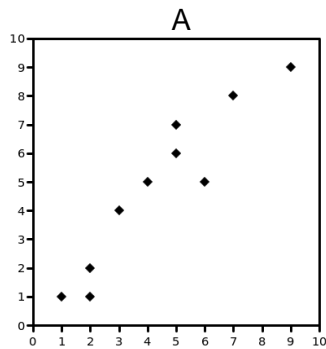


Turn over for next question

Turn over ►

2 Circle the answer that best describes the correlation of the following scatter graphs. (Level 3)

2(a)



[1 mark]

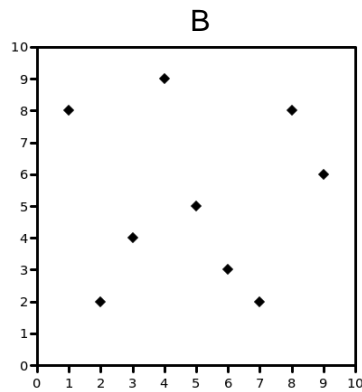
weak positive

strong positive

strong negative

no correlation

2(b)



[1 mark]

strong negative

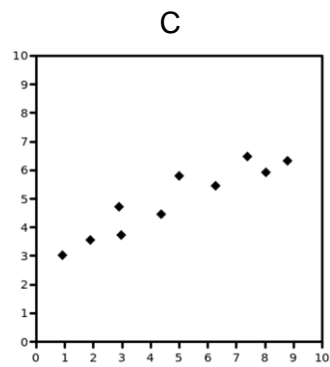
strong positive

weak negative

no correlation

Question continues on next page

2(c)



[1 mark]

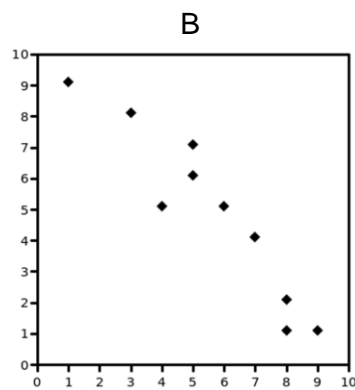
weak positive

strong positive

strong negative

no correlation

2(d)



[1 mark]

strong negative

strong positive

weak negative

no correlation

Turn over for next question

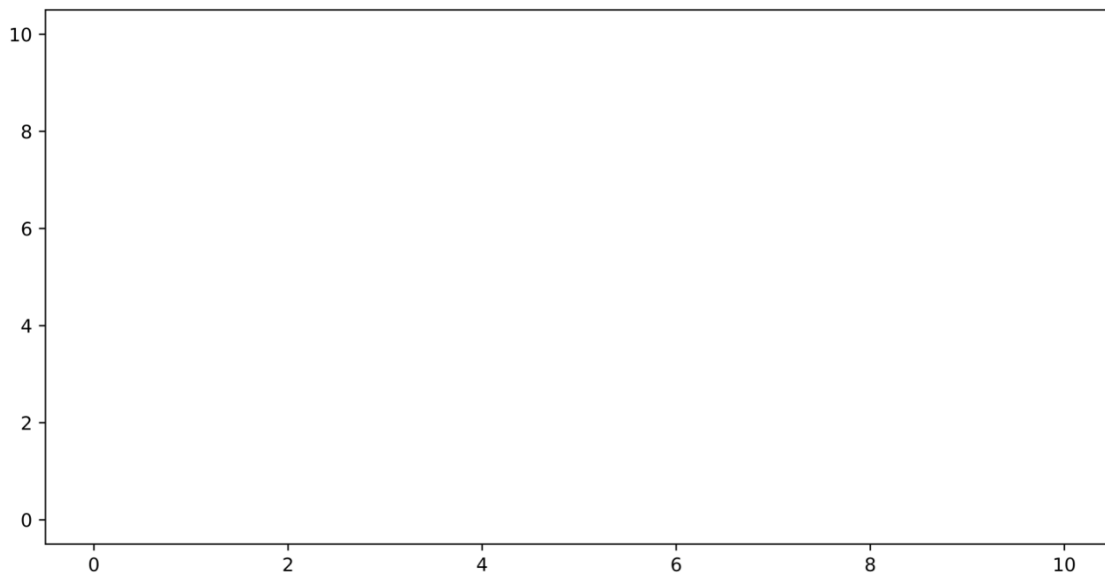
- 3** The table below shows the number of rainy days in a month and the number of umbrellas sold for that month.

(Level 4)

Plot the following data as a scatter graph below, labelling your axis.

Number of rainy days	Umbrellas sold
9	9
5	6
6	4
3	2
2	3
7	5
8	8
1	0
4	3
0	2

[3 marks]



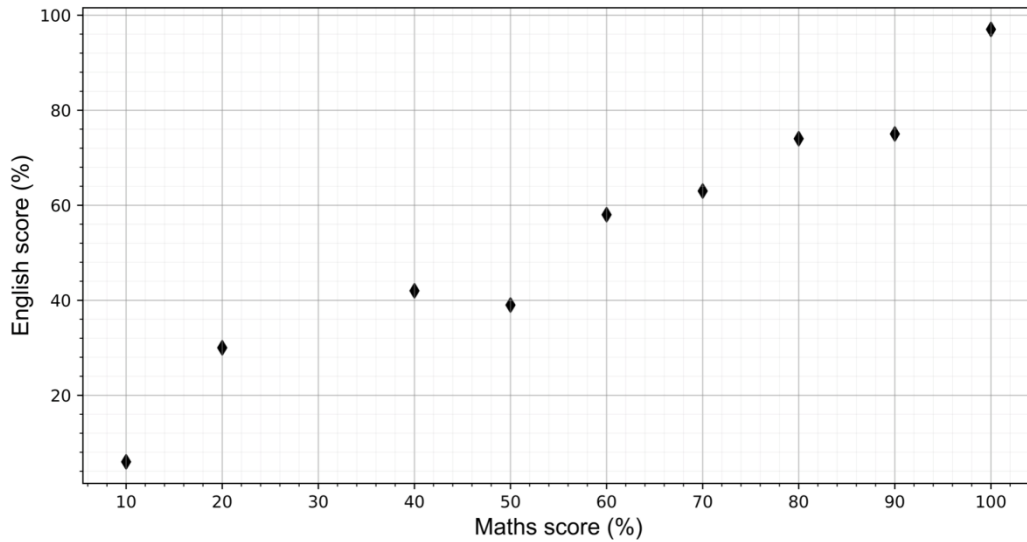
Turn over for next question.

Turn over ►

4 Maths and English test scores for 10 students in a class are plotted in a scatter graph. (Level 4)

4(a) Draw a line of best fit for the data on the graph below.

[1 mark]



4(b) Another student in the class scores 55% on their maths test
Use the graph above to predict their English score.

[1 mark]

Answer _____

4(c) How accurate is your prediction?

[1 mark]

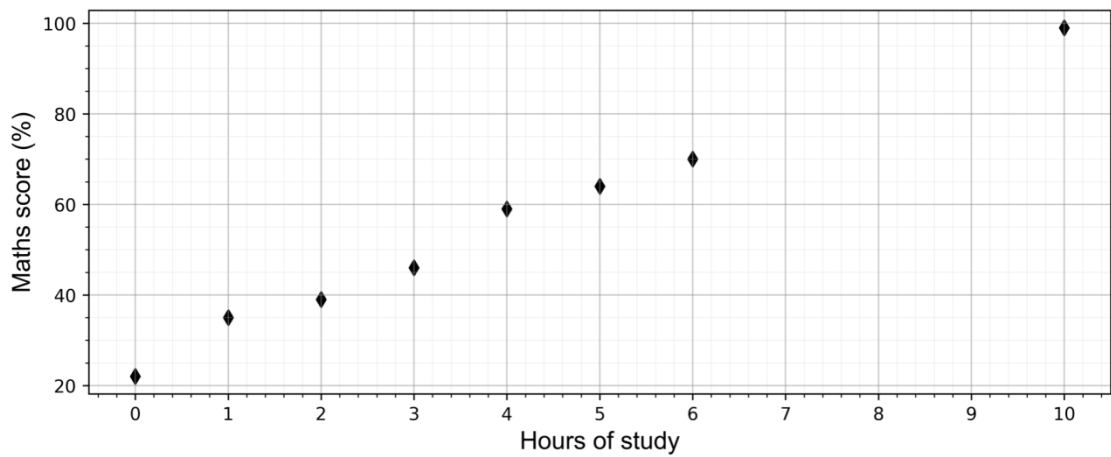
Turn over for next question

- 5** A teacher tracks the number of hours spent studying by students, versus their results in a maths test. (Level 4)

A scatter graph of the results is shown below.

- 5(a)** Draw a line of best fit for this data.

[1 mark]



- 5(b)** Based on the data, predict the results of a student who studies for 8 hours.

[2 marks]

Answer _____

Turn over for next question

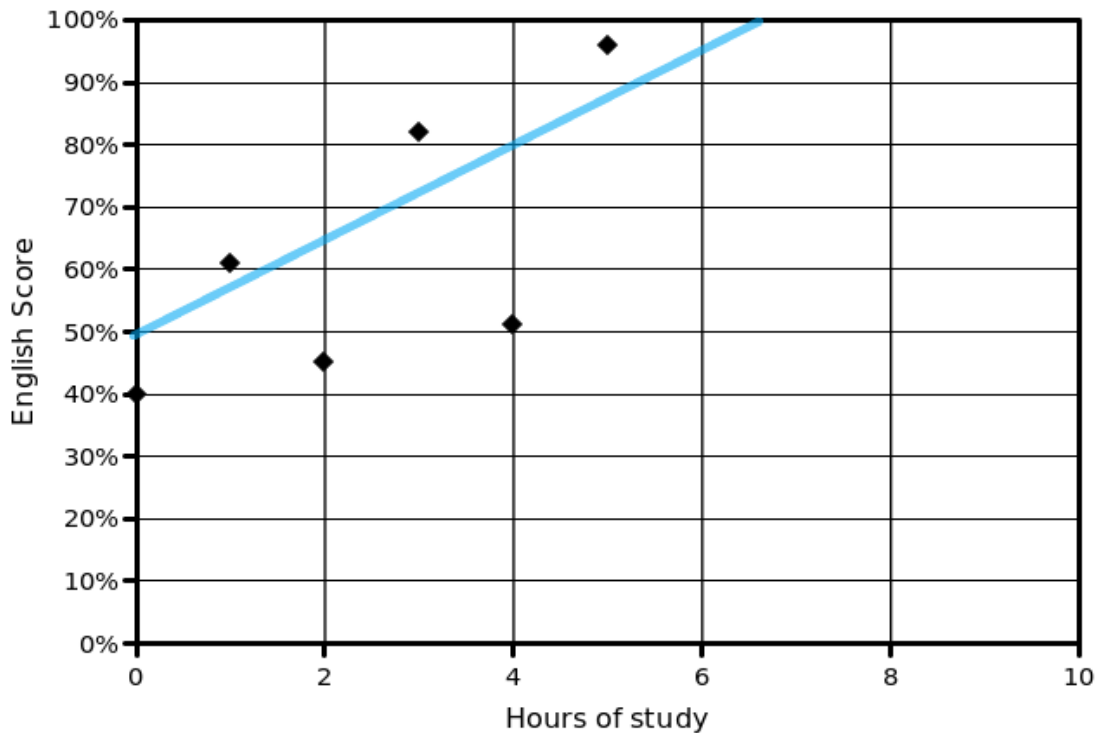
6

The amount of revision students undertake, in preparation for an English test, is recorded in scatter graph against their results.

(Level 4)

A student looks at his data and draws a line of best fit.

The student says, "If I studied for 7 hours, I would get 100% on my English Test."



Give two reasons why this statement is unlikely to be true.

[2 marks]

1.

2.

Turn over for next question

Turn over ►

7 Data is collected on the number of adults and children taking the bus on several days. (Level 4)

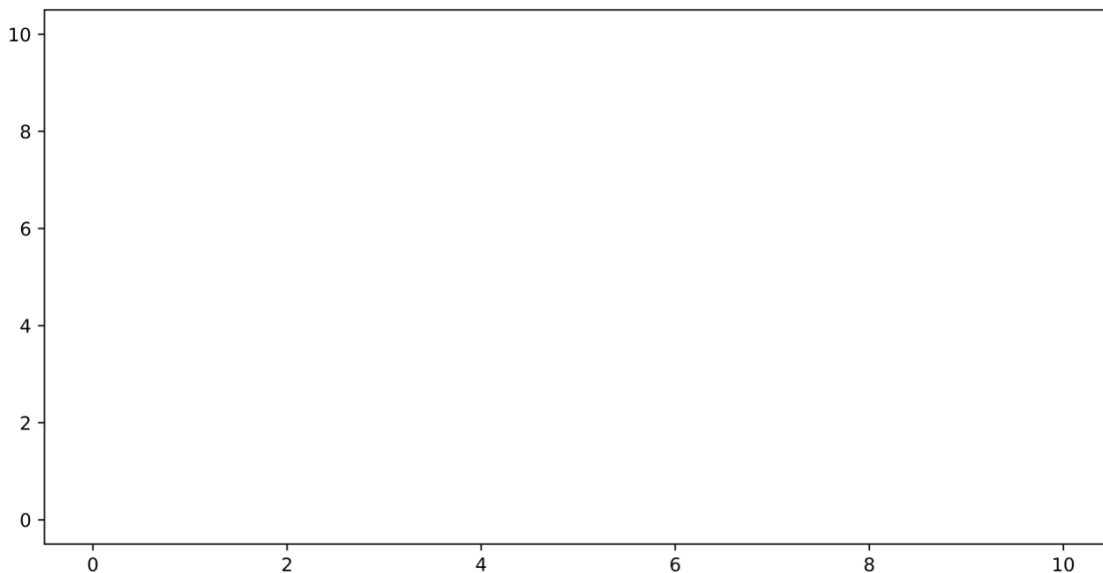
Day	Adults taking the bus	Children taking the bus
1	4	5
2	7	8
3	1	3
4	8	1
5	2	4
6	9	9
7	3	4
8	5	6
9	6	6

7(a) Plot a scatter graph to compare the number of adults and the number of children taking the bus, making sure to clearly distinguish and label each data set when plotting.

Add a line of best fit.

Make sure to label your axes.

[3 marks]



Question continues on next page

Turn over ►

7(b) Circle the one outlier on your scatter graph

[1 mark]

If the one outlier was removed, what would happen to:

7(c) The line of best fit

[1 mark]

Answer _____

7(d) The correlation of the data

[1 mark]

Answer _____



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