

Teaching The Fundamentals: Level 2 Scatter Diagrams

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Scatter Diagrams

What does the Chief Examiner say?

- For scatter diagrams learners cannot read off accurately and the use of lines of best fit to make predictions is not well understood.
- Many lines go through the origin when they should not others join in a dot-to-dot manner.
- Centres should be aware this is the only diagram specifically referenced at level 2, although level 1 diagrams can be used, so is commonly seen on papers.
- Being competent with drawing and using scatter diagrams will aid all learners greatly.

Scatter Diagrams

What are scatter diagrams used for?

- To show visually the correlation / relationship between two sets of data.
- There can be a positive correlation, a negative correlation and no correlation.

Top Tip

- Ask the class for situations where they might find a positive or a negative or no correlation in data.
 - Matching exercise (situations to correlations)

Scatter Diagrams

What do the learners need to be able to do?

- Plot a graph
- Label a graph
- Use of linear scale
- Add a line of best fit
- Describe a correlation
- Estimate answers using the line of best fit

Scatter Diagrams

An example question

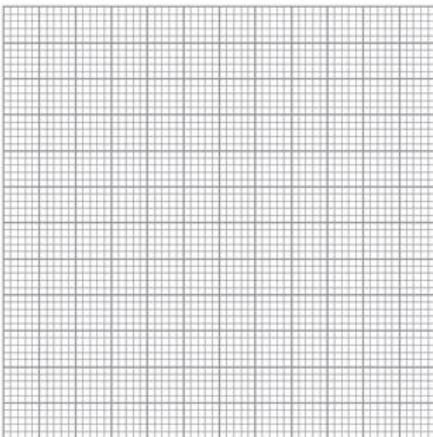
Steve is writing a report about TV viewing.
He has the following information.

Number of people in the household	3	5	5	6	5	2	4	2
Number of TVs in the household	2	3	4	4	5	1	3	2

Steve thinks there is a relationship between the number of people and the number of TVs in a household.

(a) Draw a suitable diagram for Steve.

(3)



(b) Describe the relationship between the number of people and the number of TVs in a household.

(1)

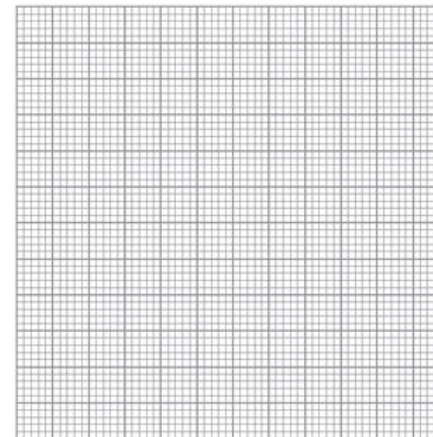
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Scatter Diagrams

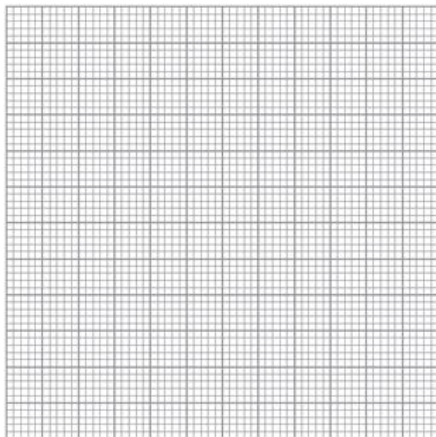
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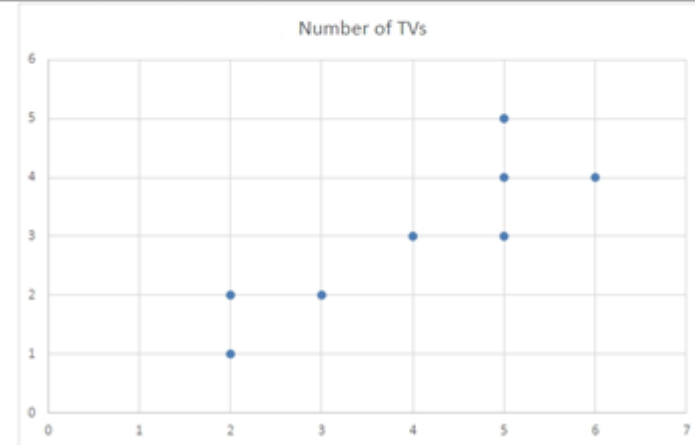


(3)

(b) Describe the relationship between the number of people and the number of TVs in a household.

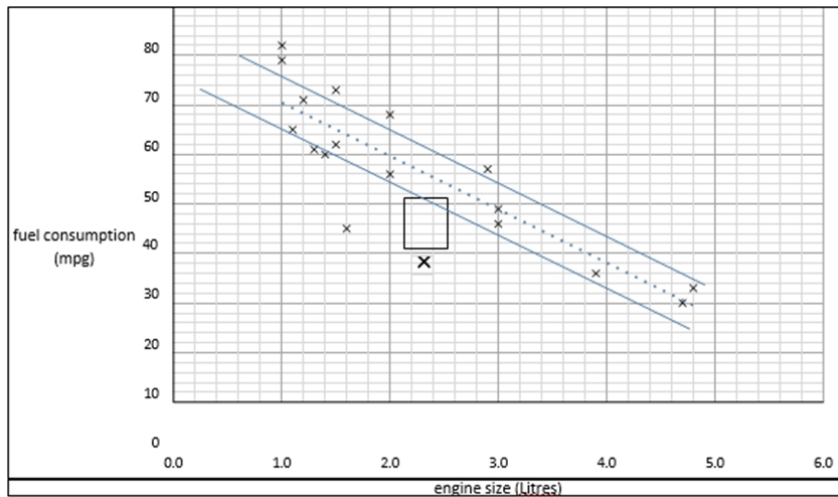
(1)

Question	Process	Mark	Mark Grid	Evidence
(a)	Begins to draw scatter graph	1 or	A	One of: linear scales plotting (at least 4 correct) labels
	Develops solution	2 or	AB	Two of: linear scales plotting (at least 4 correct) labels
	Accurate diagram	3	ABC	All of: linear scales that cover data range plotting (allow 1 error or omission) labels Minimum Labels to include (number of) People, (number of) TVs or appropriately detailed title
(b)	Accurate description	1	D	Positive correlation or descriptive statement – e.g. 'as the number of people in a household increases so does the number of TVs watched.'
Total marks for question		4		



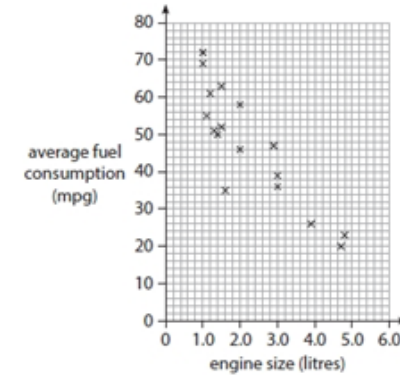
Scatter Diagrams

An example question



Question	Process	Mark	Mark Grid	Evidence
a	Correct plotting	1	A	Plots point (2.3, 36)
b	Draws line of best fit	1	B	Line of best fit drawn
c	Accurate figure	1	C	e.g. 26 ft accurate reading from their line of best fit
d	Selects correct answer	1	D	Ticks negative
Total marks for question		4		

The scatter diagram shows some information about the engine size in litres and average fuel consumption in miles per gallon (mpg) of some cars.



Here is the information for another car

- engine size 2.3 litres, average fuel consumption 36 mpg.

(a) Plot this information on the scatter graph. (1)

(b) Draw a line of best fit on the scatter graph. (1)

Mikael buys a car with an engine size of 4.2 litres.

(c) Use your line of best fit to estimate the average fuel consumption of this car. (1)

mpg

(d) What type of correlation is shown in this scatter diagram?
Tick a box to show your answer. (1)

unlikely negative even neutral positive likely



Pearson