Scatter

Plot the information on the graph paper, Draw the line of best fit and describe the type correlation.

Q.1 The height and shoe size of 10 pupils are give. Draw a scatter diagram of the information.

Shoe size:	3	2	5	6.5	4	3	6	1	3.5	7.5
Height cm:	133	126	150	158	135	128	152	118	142	101

Types of Correlation:

Q.2 Draw a scatter diagram and describe relationship between two variables.

Variable P	19	17	5	14	26	5	24	8
Variable Q	13	19	37	21	4	33	10	29

Types of Correlation:

Q.3

Variable R	35	10	50	18	39	24
Variable P	0.35	0.05	0.58	0.13	0.47	0.27

Types of correlation

Q.4

Variable A	30	10	20	37	16	45	55	5	46
Variable B	68	20	57	48	40	47	21	57	30

Types of correlation

Q.5

Paper A	30	56	40	68	14	85	64	28	79	48
Paper B	30	39	20	73	16	83	45	15	62	44

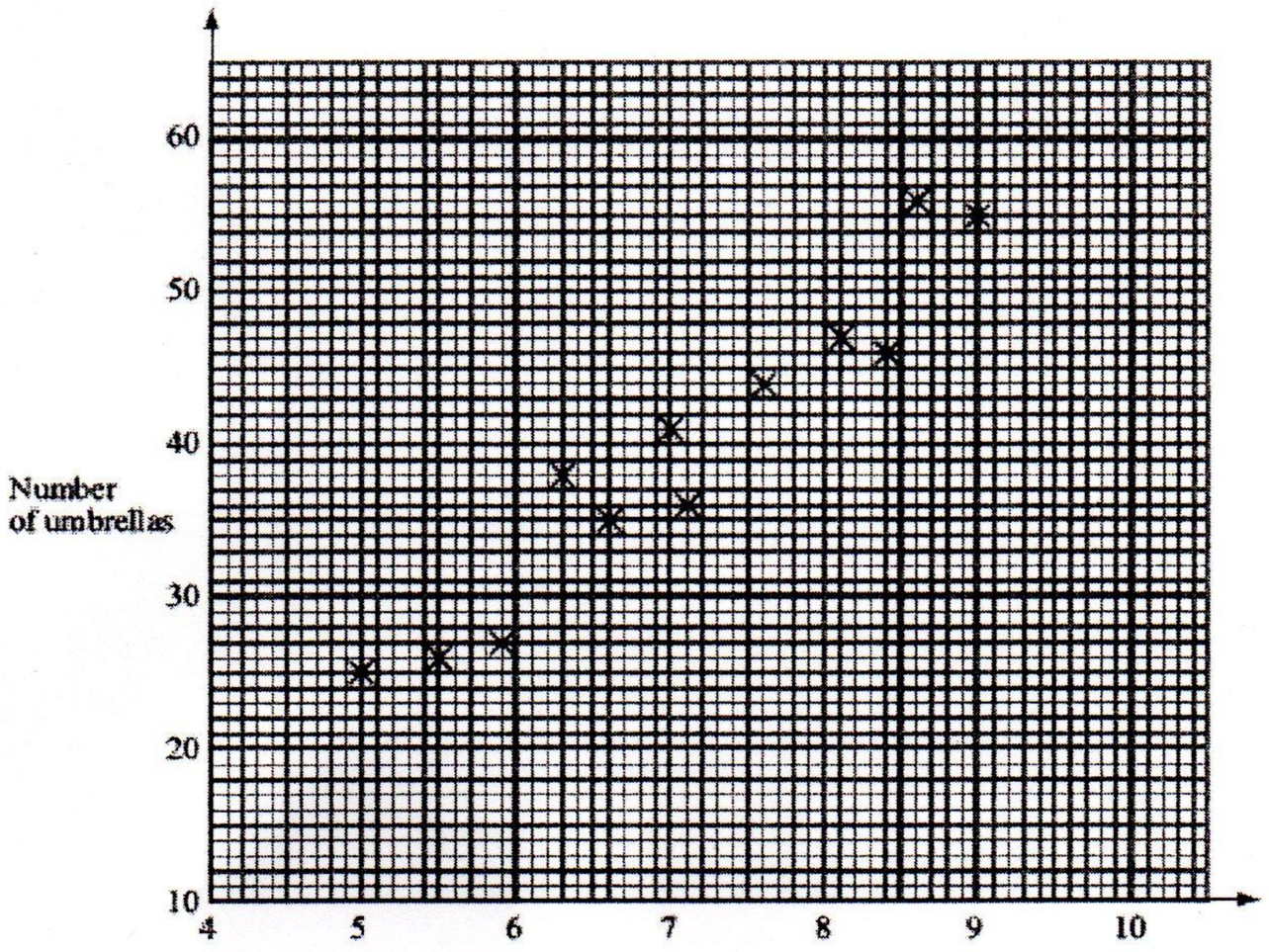
Types of correlation

Q.6

Height	6.5	4	5	3	5.5	3	6
Weight, (kg)	75	65	70	50	75	45	80

Types of correlation:

Q. 7 Mr Wither sells umbrellas. The scatter graph shows some information about the number of umbrellas he sold and the rainfall, in cm, each month last year.



In January of this year, the rainfall was 6.1 cm .During January, Mr Wither sold 32 umbrellas.

(a) Show this information on the scatter graph.

(b) What type of correlation does this scatter graph show?

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In February of this year, Mr Wither sold 40 umbrellas.

(c) Estimate the rainfall for February.

..... cm

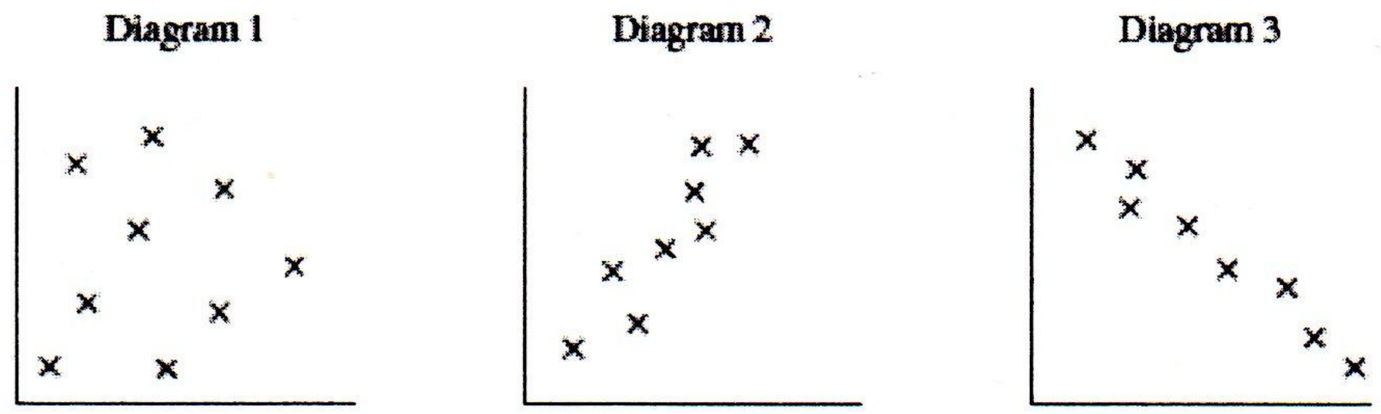
8) Here are three statements.

A The amount of rainfall and the number of sunbeds hired on a beach

B The number of people living in a house and the size of the garden

C The age of a child and the height of a child

Here are three scatter diagrams:



Match each scatter diagram to a statement.

Statement A Diagram .....

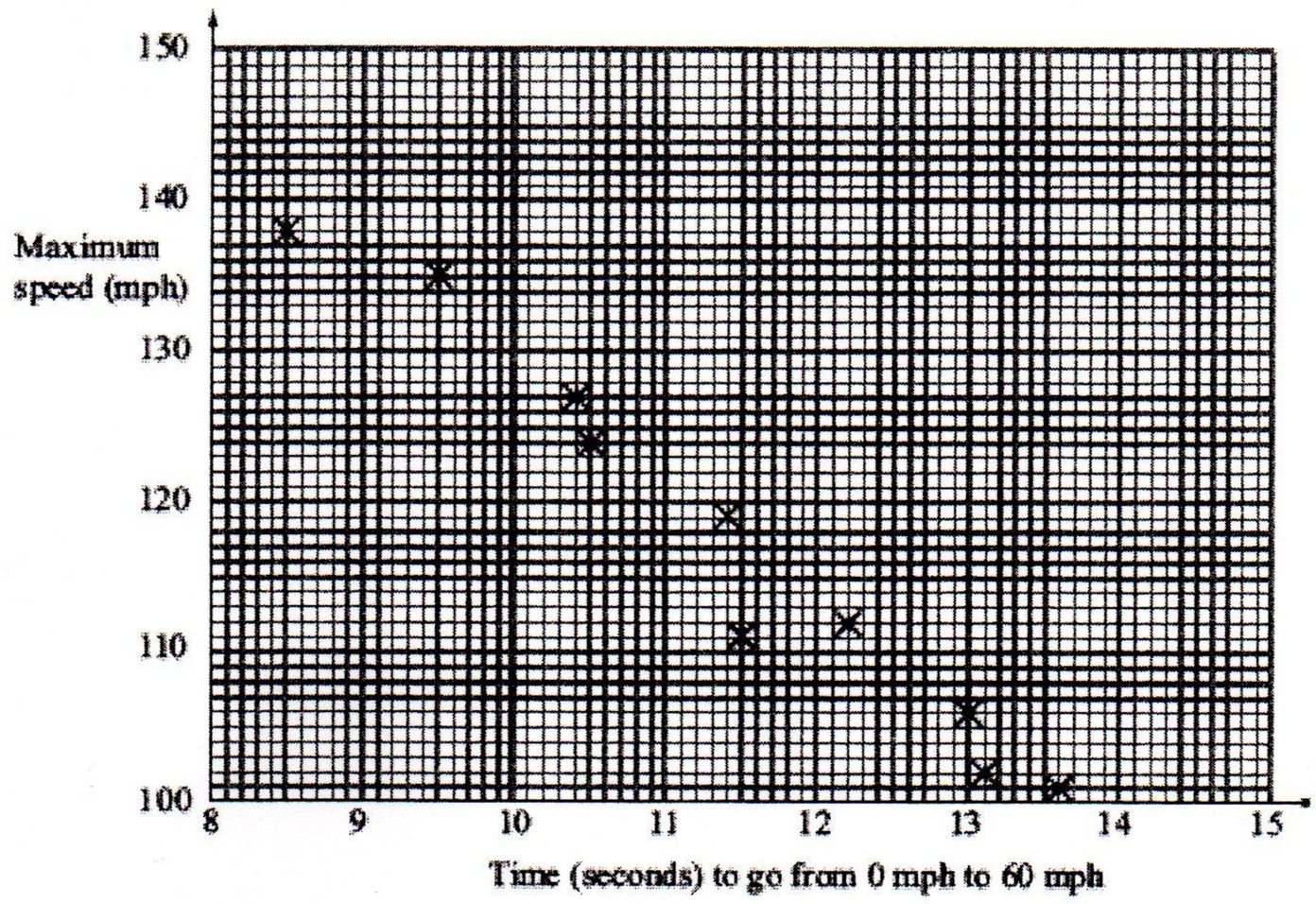
Statement B Diagram .....

Statement C Diagram .....

9) The scatter graph shows some information about 10 cars.

It shows the time, in seconds, it takes each car to go from 0 mph to 60 mph.

For each car, it also shows the maximum speed, in mph.



(a) What type of correlation does this scatter graph show?

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The time a car takes to go from 0 mph to 60 mph is 11 seconds.

(b) Estimate the maximum speed for this car.

..... mph

10) The table below shows the marks for ten pupils in their mathematics and geography examinations.

Pupil	Anna	Beryl	Cath	Dema	Ethel	Fatima	Greta	Hannah	Imogen	Sitara
Maths	57	65	34	87	42	35	59	61	25	35
Geog	45	61	30	78	41	36	35	57	23	34

a Plot the data on a scatter diagram. Take the *x*-axis for the mathematics scores and mark it from 20 to 100. Take the *y*-axis for the geography scores and mark it from 20 to 100.

b Draw the line of best fit.

c One of the pupils was ill when she took the geography examination. Which pupil was it most likely to be?

d If another pupil, Kate, was absent for the geography examination but scored 75 in mathematics, what mark would you expect her to have got in geography?

_____

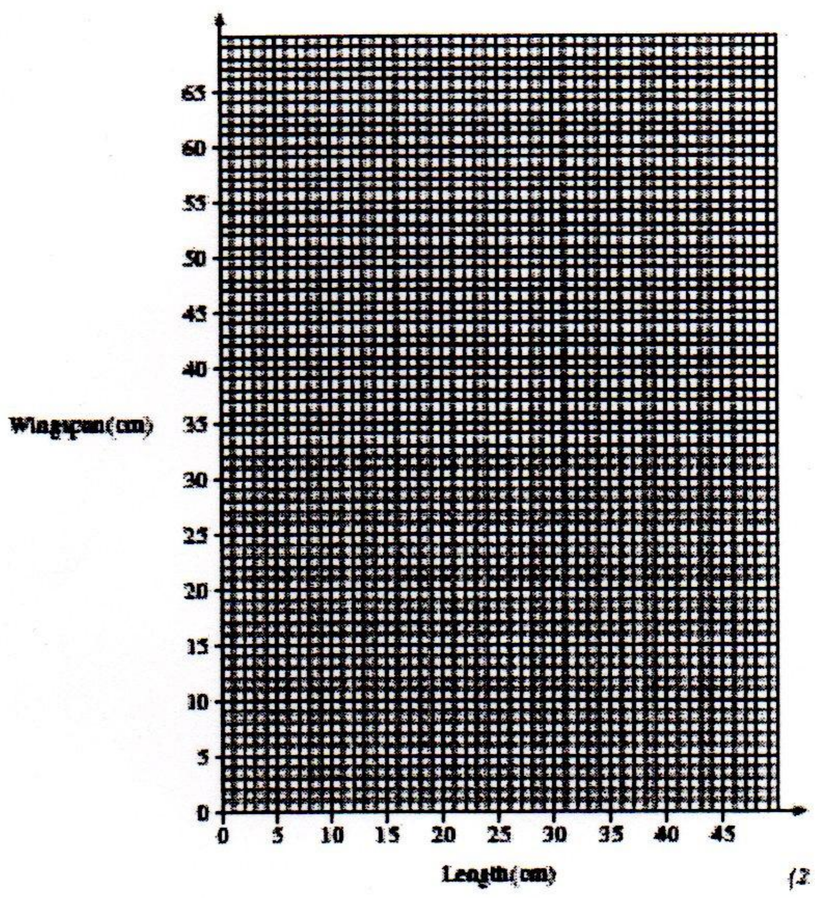
e If another pupil, Lina, was absent for the mathematics examination but scored 65 in geography, what mark would you expect her to have got in mathematics?

_____

11) The length and wingspan, in centimetres, of seven common garden birds is shown in the
table.

Bird	Length (cm)	Wingspan (cm)
Starling	21	40
Blackbird	25	36
Blue Tit	11	19
Greenfinch	15	26
Dove	32	51
Sparrow	15	23
Great Tit	14	24

(a) Plot the data as a scatter graph on the grid below.



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(b) Describe the strength and type of correlation.

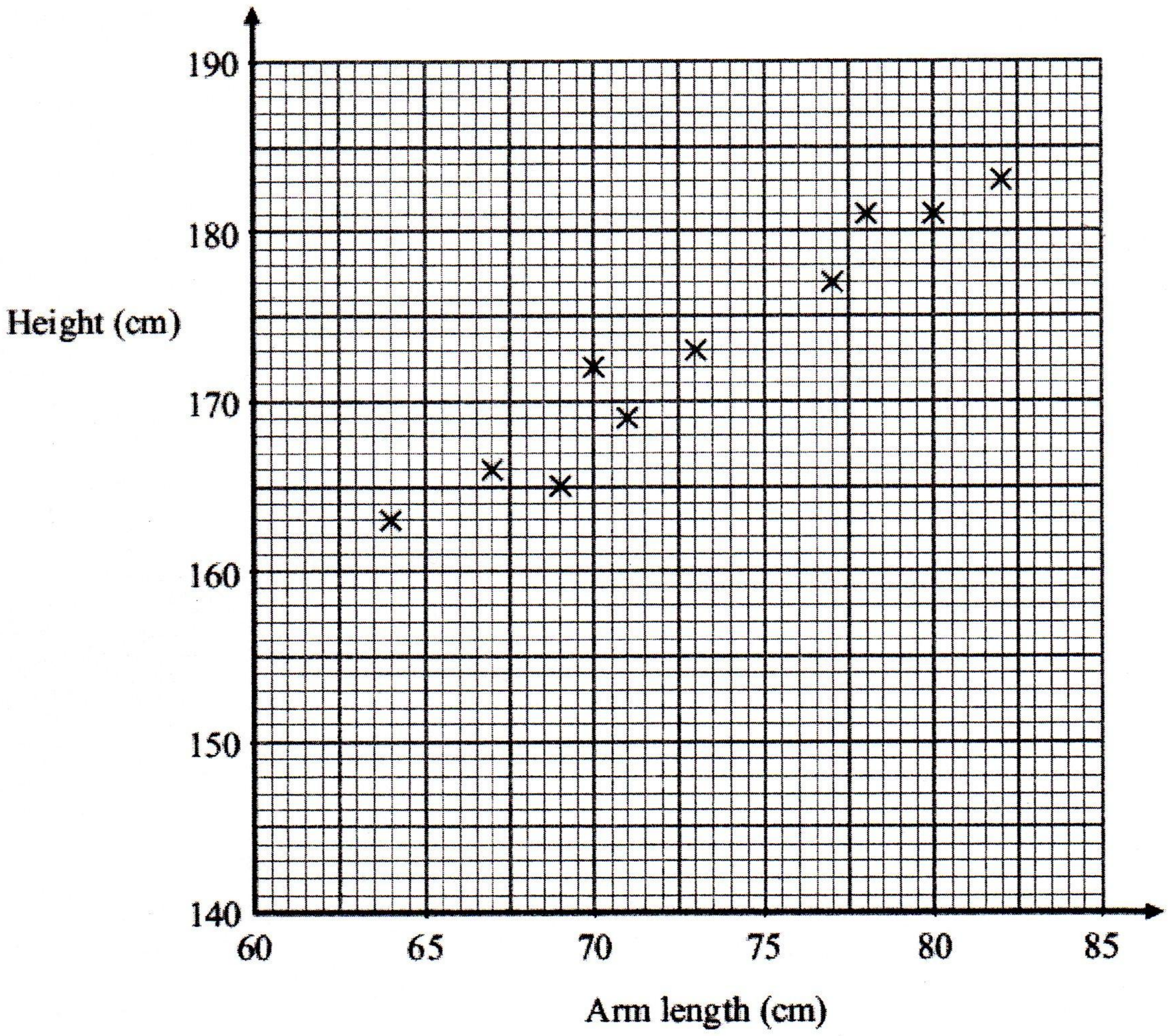
(c) Draw a line of best fit on your scatter graph.

(d) Use your line of best fit to estimate the wingspan of a thrush whose length is 20 cm.
Answer ..... cm

(e) It is **not** sensible to use your line of best fit to estimate the wingspan of a pigeon whose length is 41 cm.
Explain why.

12) The scatter graph shows some information about 10 students.

It shows the arm length and the height of each student.



(a) What type of correlation does this scatter graph show?

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

Another student has an arm length of 75 cm.

(c) Use your line of best fit to estimate the height of this student.

..... cm