

Name

Key to Five

Unit 7: Scatter Graphs

The PiXL Ladder to Success

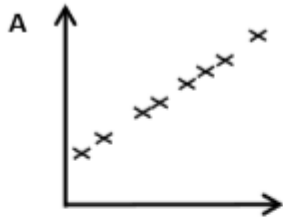


- Questions in context
- Identifying outliers
- Describing correlation
- Line of best fit
- Plotting scatter diagrams
- Reading values from scatter diagrams

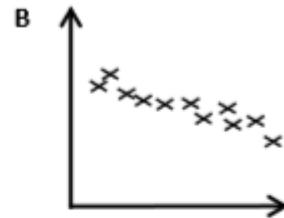
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Section A
Question 1

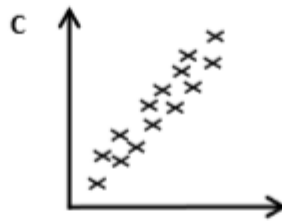
(a) Each of these diagrams show a type of correlation. State the type of correlation shown in each diagram



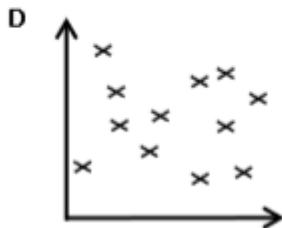
..... correlation



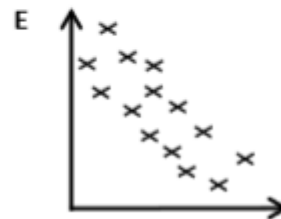
..... correlation



..... correlation



..... correlation



..... correlation

(5)

(b) The heights and weights of some students were plotted on a scatter graph. Which of the diagrams above shows the relationship you would expect to see on the scatter diagram. Choose A, B, C, D or E

(1)

Question 2.

Ten books were chosen and the average number of words on a page and the size of the font used to print the book were recorded.

a) Draw a diagram to show the results you would expect to see. Label the axes and plot 10 points to represent the results you would expect to see.

(3)

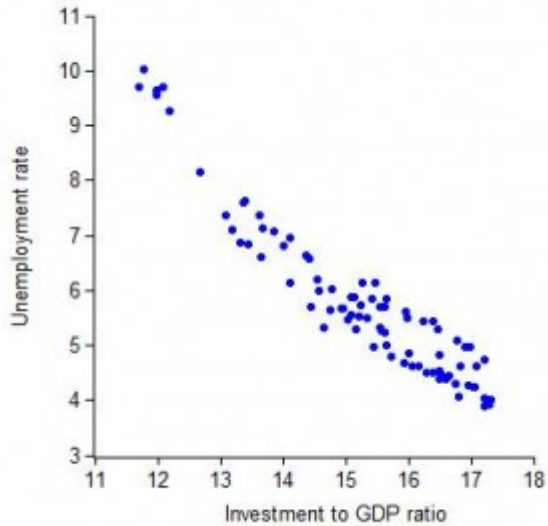
b) What kind of correlation does your diagram show?

(1)

Question 3

Each of these diagrams of real-life situations show a type of correlation. State the type of correlation shown in each diagram.

(a)



.....

(2)

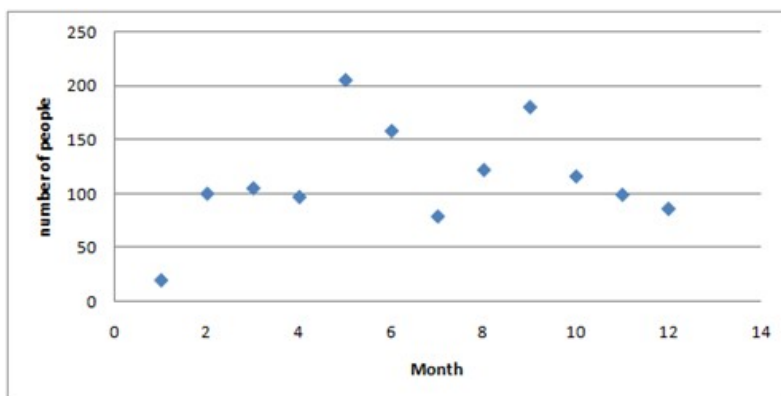
(b)



.....

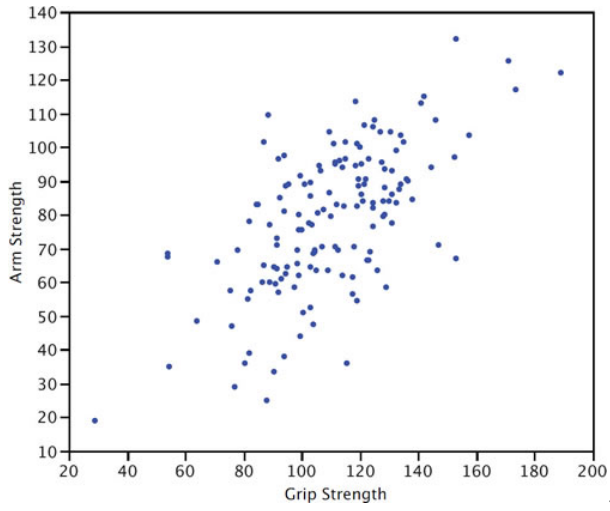
(2)

(c)



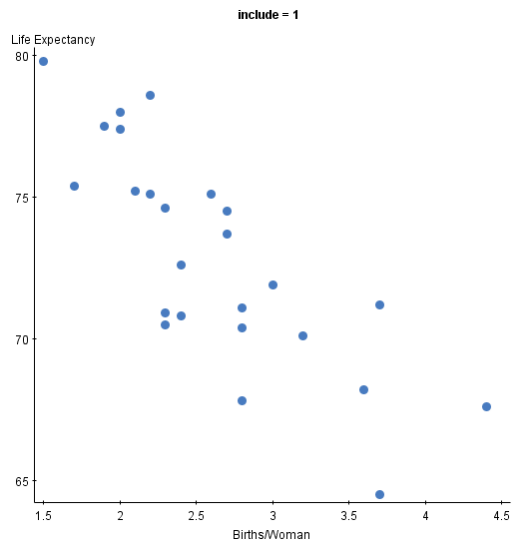
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(d)



(2)

(e)

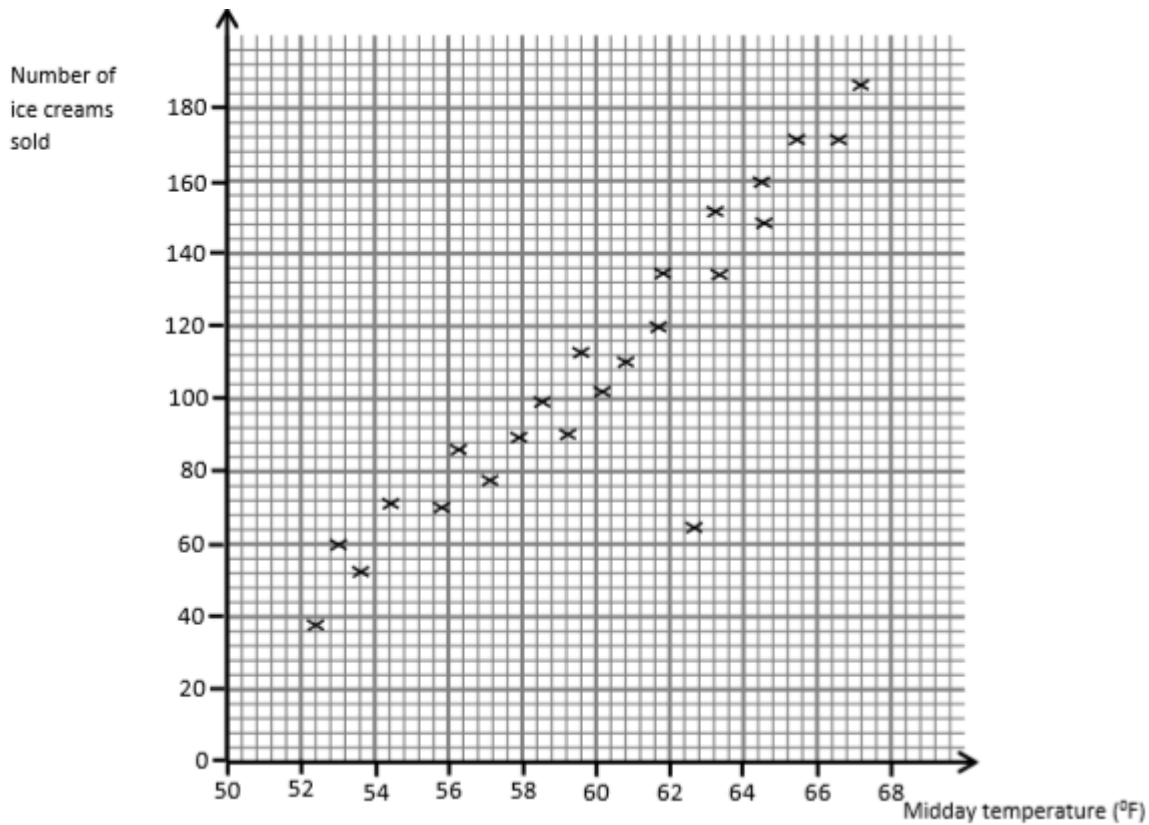


(2)

Section B

Question 4

The scatter graph shows the number of ice creams sold plotted against the midday temperature



a) How many ice creams were sold on the hottest day?

(1)

b) Draw the line of best fit on the scatter graph

(1)

c) Describe the relationship between the number of ice creams sold and the midday temperature

(1)

d) Predict the midday temperature if 105 ice creams were sold.

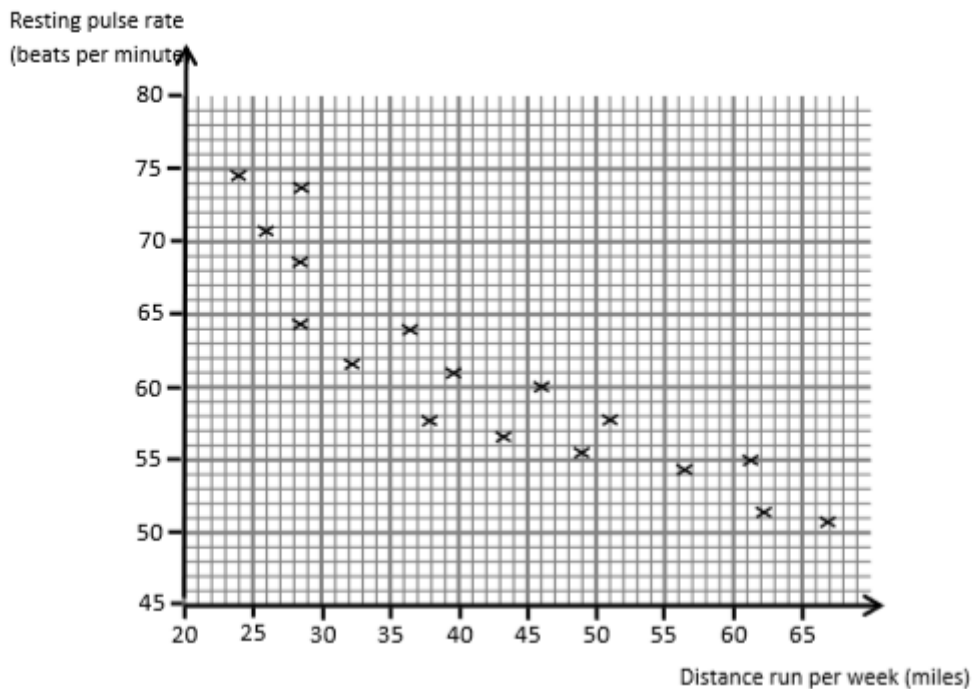
(1)

e) One point has been plotted incorrectly. Draw a circle round this point.

(1)

Question 5

Some runners recorded their resting pulse rates and miles run per week



a) How many runners ran 28.5 miles in a week?

(1)

b) A runner who ran 53 miles in a week had a resting pulse rate of 49 beats per minute. Plot this point on the scatter graph.

(1)

c) Draw the line of best fit

(1)

d) Describe the relationship between the resting pulse rate and the miles run per week.

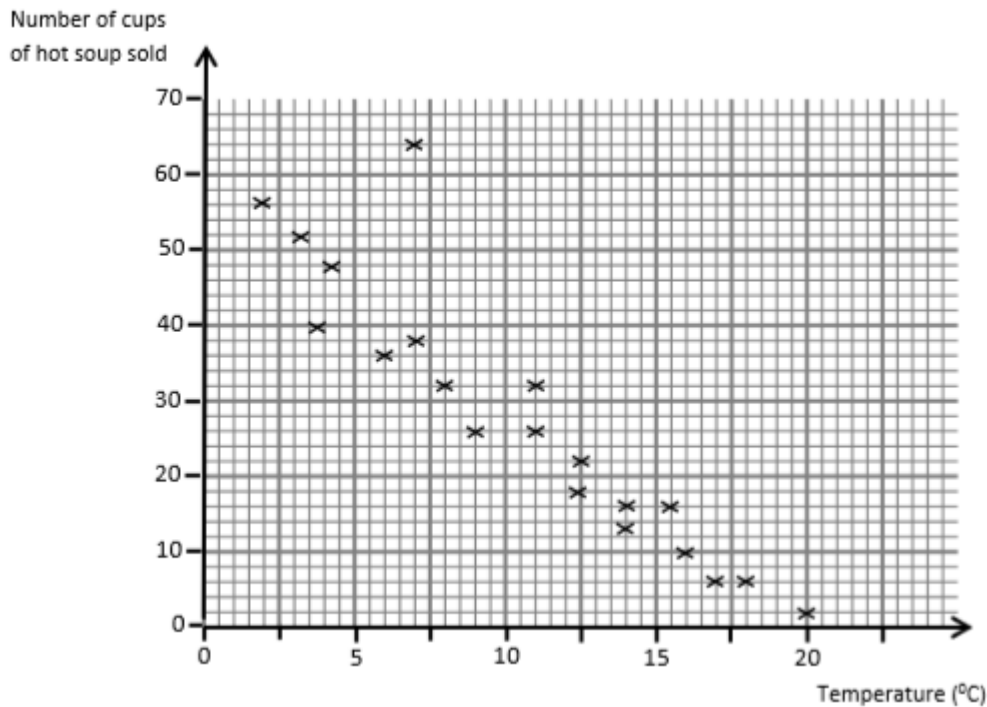
(1)

e) Use your line of best fit to predict the resting pulse rate of a runner that runs 34 miles in a week.

(1)

Question 6

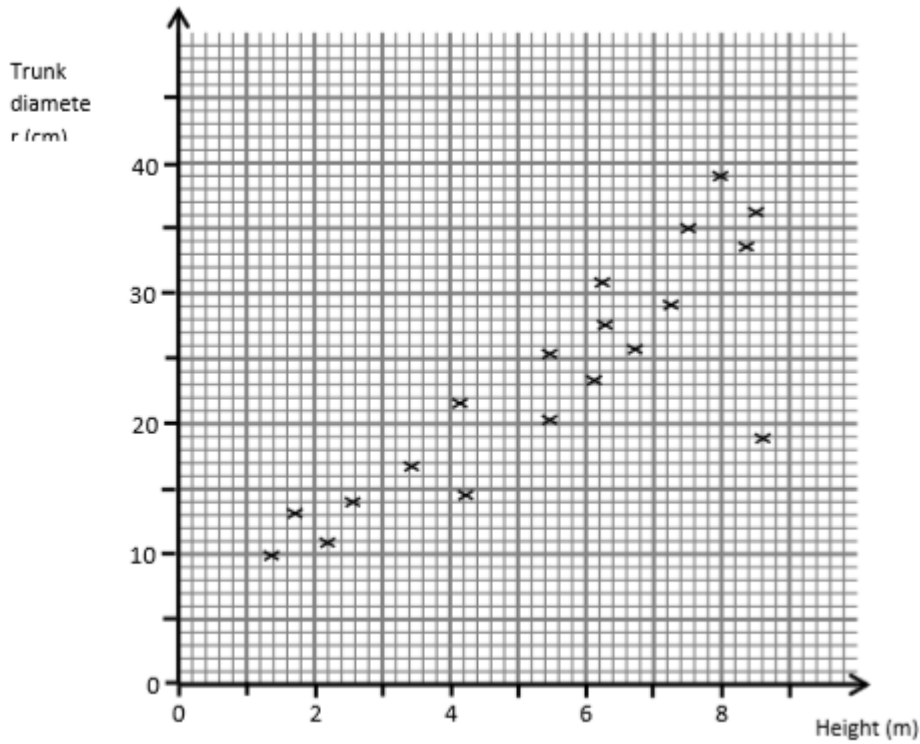
The scatter graph shows the number of cups of hot soup sold plotted against the midday temperature



- a) 43 cups of hot soup were sold when the temperature was 60°C. Plot this point on the scatter graph. (1)
- b) Draw the line of best fit on the scatter graph (1)
- c) Describe the relationship between the number of cups of hot soup sold and the midday temperature (1)
- d) Use your line of best fit to predict the number of cups of soup sold when the temperature was 12°C. (1)
- e) One point has been plotted incorrectly. Draw a circle round this point. (1)

Question 7

The scatter graph shows the height and trunk diameter of some trees



a) How many trees were between 6 and 7 metres tall?

(1)

b) Most of the trees plotted on the scatter graph are oak trees but one is a pine tree. What is the trunk diameter of this tree?

(1)

c) Draw the line of best fit

(1)

d) Describe the relationship between the height and trunk diameter of the trees.

(1)

e) Use your line of best fit to predict the height of an oak tree that has a trunk diameter of 33cm?

(1)

Question 8

The table below shows the distance a car park is away the town centre and the price it cost per hour to park there.

Distance from town centre (metres)	Cost to park for 1 hour (£)
30	3
160	2.8
190	2.4
300	1.8
500	1
420	1.6
300	2
90	2.8
600	0.5
200	2.3

(a) By drawing an appropriate diagram state if there is a relationship between the two, giving reasons.

(5)

(b) Using your graph estimate:

i) The cost to park for one hour in a 350 metres from the town centre

ii) The distance a car park that charges £1.50 per hour is from the car park.

(3)

(c) Do you think that this trend will continue, explain your answer.

(2)