Scatter graphs and stem and leaf

Year 8 | Key Stage 3 | 12 questions, 39 marks

KS3 Maths topic practice

Scan for the solutions

Name: _____ **Date:** _____ **Score:** _____ **/ 39**

1 Write down the type of correlation you would expect to see in a scatter graph of each of the following.

a. The daily temperature and the number of ice creams sold at a kiosk.

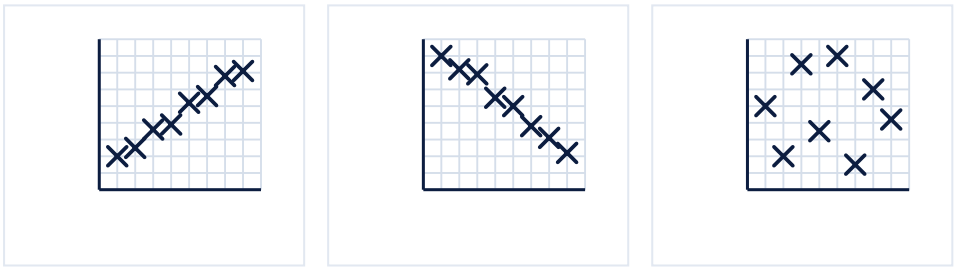
b. The age of a car and its value.

(2 marks)

Answer _____

2 Here are three scatter graphs.

For each graph, write down the type of correlation it shows.



A ***B*** ***C***

(3 marks)

Answer _____

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3 The stem and leaf diagram shows the masses, in grams, of some tomatoes.

Stem	Leaves
2	1 4 6
3	0 2 5 8
4	3 7

Key: 2 | 1 = 21 grams

Find the range of the masses.

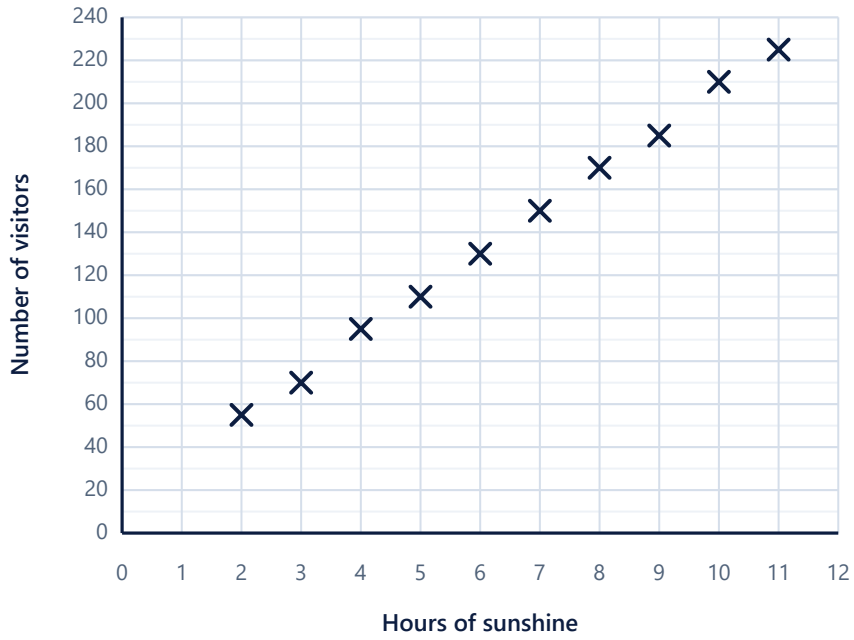
(2 marks)

Answer _____

4 The scatter graph shows the number of hours of sunshine and the number of visitors to a country park on each of 10 days.

a. Describe the correlation shown by the scatter graph.

b. On another day there were 7.5 hours of sunshine. By drawing a line of best fit, estimate the number of visitors to the park on this day.



(3 marks)

Answer _____

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5 Here are the numbers of keepy-uppies done by 14 pupils in a PE lesson.

34 12 27 41 18 25 33 9 22 38 15 29 30 44

a. Draw an ordered stem and leaf diagram for these numbers. Include a key.

b. Work out the median.

c. Work out the range.

Stem | Leaves

(4 marks)

Answer _____

6 The stem and leaf diagram shows the number of press-ups 11 students did in one minute.

Stem	Leaves
0	6 8
1	1 3 5 7 9
2	2 4 6 8

Key: 1 | 1 = 11 press-ups

a. Find the median number of press-ups.

b. Find the range of the number of press-ups.

(3 marks)

Answer _____

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7 The table shows how long 8 pupils spend on their phones each day and how long they sleep each night.

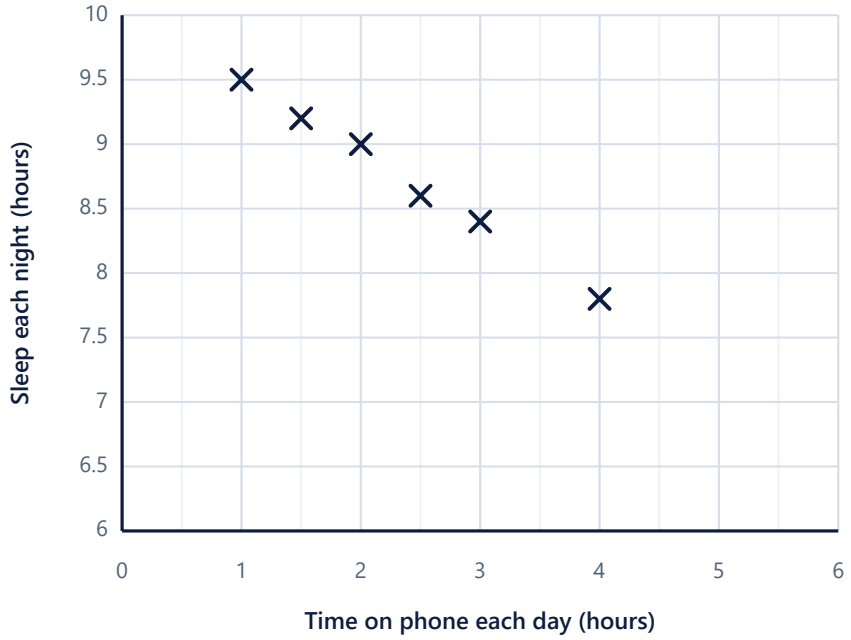
Phone (hours)	1	1.5	2	2.5	3	4	4.5	5
Sleep (hours)	9.5	9.2	9	8.6	8.4	7.8	7.6	7.2

The first six points are plotted on the scatter graph.

a. Plot the last two points.

b. Describe the correlation.

c. Draw a line of best fit. Use it to estimate how long a pupil who spends 3.5 hours a day on their phone sleeps.



(4 marks)

Answer _____

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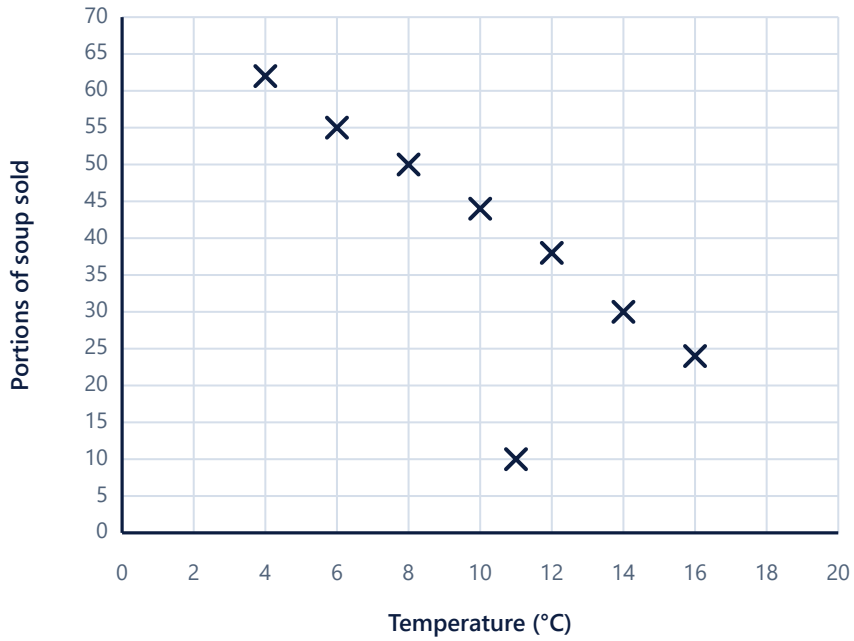
8 The scatter graph shows the outside temperature, in °C, and the number of portions of soup sold by a cafe on each of 8 days.

a. One of the points is an outlier. Write down the coordinates of this point.

b. Ignoring the outlier, use the graph to estimate the number of portions of soup sold on a day when the outside temperature is 9 °C.



(3 marks)

Answer _____

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9 The stem and leaf diagram shows the scores of 15 pupils in a times tables quiz.

Stem	Leaves
1	5 8 8
2	0 3 6 6 6 9
3	1 2 4 7
4	0 5

Key: 2 | 3 = 23

Work out

a. the mode

b. the median

c. the mean

(3 marks)

Answer _____

10 11 pupils from Year 7 and 11 pupils from Year 8 each solved a puzzle. The back-to-back stem and leaf diagram shows their times, in seconds.

Year 7	Stem	Year 8
8 5 2	1	1 3 4 6 9
7 4 4 1	2	0 2 5 6
8 3 0	3	1 5
1	4	

Key: 2 | 1 | 3 means 12 seconds for Year 7 and 13 seconds for Year 8

a. Work out the median and the range for each year group.

b. Make two comparisons between the times of the two year groups.

(4 marks)

Answer _____

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11 The stem and leaf diagram shows the times, in minutes, that 15 students in Class A took to finish a puzzle.

Stem	Leaves
2	1 4 8
3	0 2 3 5 7 9
4	2 4 6 8
5	0 3

Key: 2 | 1 = 21 minutes

For Class B, the median time was 38 minutes and the range of the times was 15 minutes.

a. Find the median time for Class A.

b. Find the range of the times for Class A.

c. Compare the times of Class A with the times of Class B.

(4 marks)

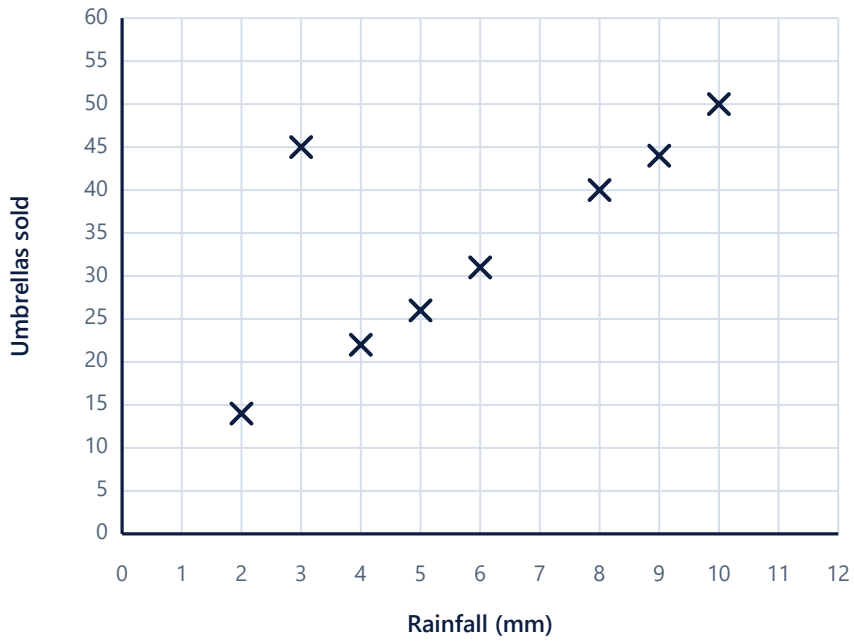
Answer _____

12 The scatter graph shows the rainfall, in mm, and the number of umbrellas sold at a market stall on each of 8 days.

a. Describe the correlation shown by the graph.

b. One point is an outlier. Circle this point and write down its coordinates.

c. Ignoring the outlier, estimate the number of umbrellas sold on a day with 7 mm of rainfall.



(4 marks)

Answer _____

End of questions | Total 39 marks

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