6.7 Scatter Graphs and Correlation: 10-minute Pack

Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Use the data: (1, 2), (2, 3), (3, 5), (4, 7). Calculate the mean of the x-values and the mean of the y-values. Give your answers as exact values.

(2)

2 A scatter graph is drawn from these points: (7, 26), (9, 32), (10, 49), (11, 38), (14, 47), (16, 54), (19, 61). The line of best fit for the other points is $y = 3x + 5$.
One point is an outlier. Write down the coordinates of the outlier.

(2)

3 A line of best fit for hours of revision (x) and test mark (y) has equation $y = 6x + 12$. Use the line to estimate y when $x = 17$.

(2)

4 The scatter graph plots age of a car in years (x) and its value in hundreds of pounds (y) for 7 cases. The points are: (2, 13), (4, 15), (6, 20), (7, 27), (8, 27), (10, 39), (13, 46). Describe the correlation shown by the points.

(2)

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Mark scheme · 6.7 Scatter Graphs and Correlation: 10-minute Pack

Question 1

calculate mean x = (1+2+3+4)/4 = 10/4 = 2.5 or 5/2	**M1**
calculate mean y = (2+3+5+7)/4 = 17/4 = 4.25 or 17/4 cao	**A1**

Answer: **mean x = 5/2; mean y = 17/4**

Question 2

compares the points with the line of best fit	**M1**
(10, 49) cao	**A1**

Answer: **(10, 49)**

Question 3

substitutes x = 17	**M1**
114 cao	**A1**

Answer: **114**

Question 4

describes the trend (as x increases, y ...) in words or the type of correlation	**M1**
positive correlation cao	**A1**

Answer: **positive correlation**

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