



ACHIEVE ACADEMY

GCSE Maths — Higher Tier

Scatter Graphs & Correlation · Practice Booklet

NAME: _____

CLASS: _____

DATE: _____

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Scatter Graphs & Correlation

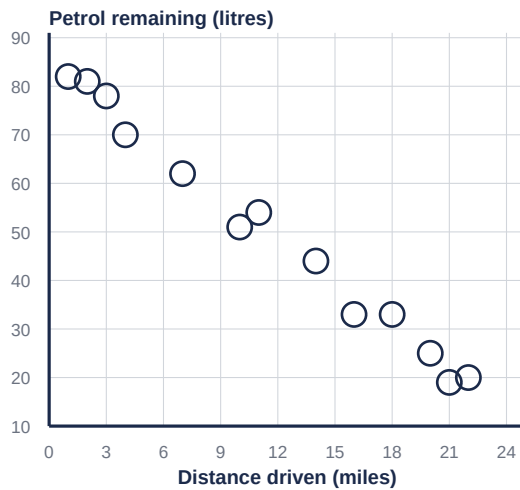
Total marks available: 76

● Scatter Graphs & Correlation

Q1

[1 mark]

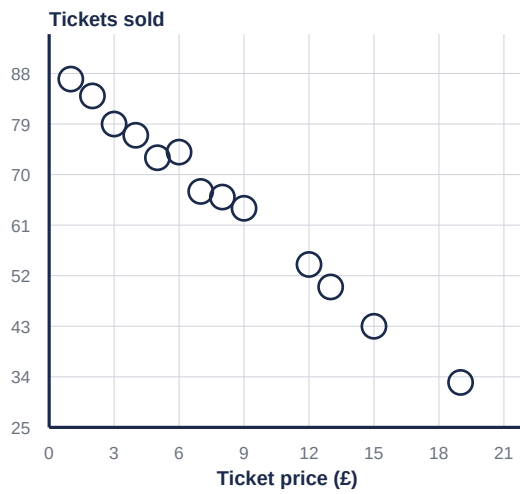
The scatter graph shows distance driven (miles) plotted against petrol remaining (litres) for a sample of journeys. Write down the coordinates of the point where distance driven (miles) = 20.



Q2

[1 mark]

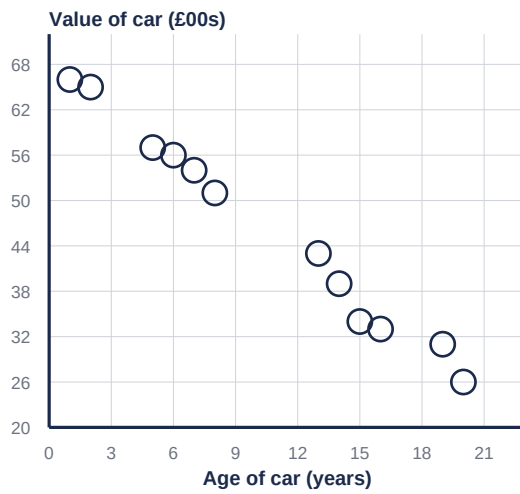
The scatter graph shows ticket price (£) plotted against tickets sold for a sample of concerts. Write down the coordinates of the point where ticket price (£) = 9.



Q3

[1 mark]

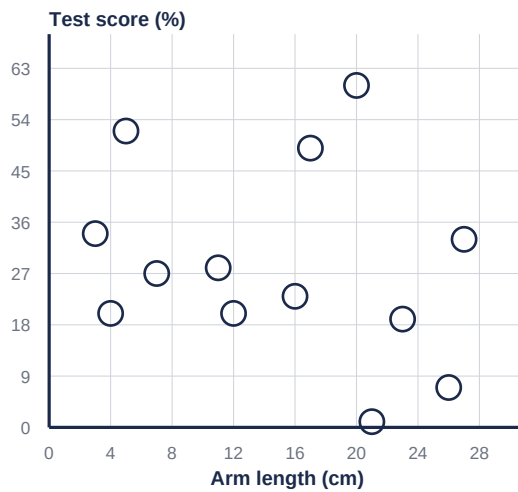
The scatter graph shows age of car (years) plotted against value of car (£00s) for a sample of cars. Write down the coordinates of the point where age of car (years) = 8.



Q4

[1 mark]

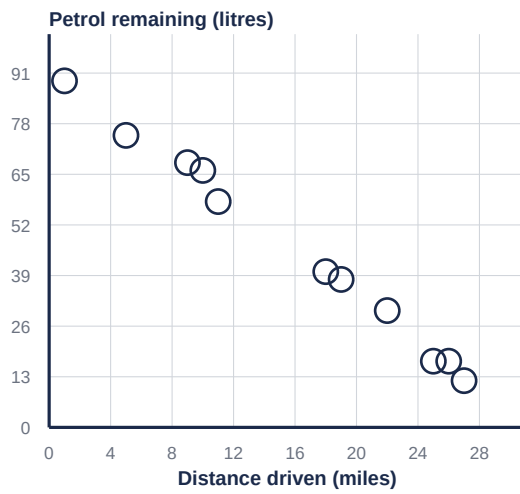
The scatter graph shows arm length (cm) against test score (%) for a sample of students. Describe the correlation shown by the scatter graph.



Q5

[1 mark]

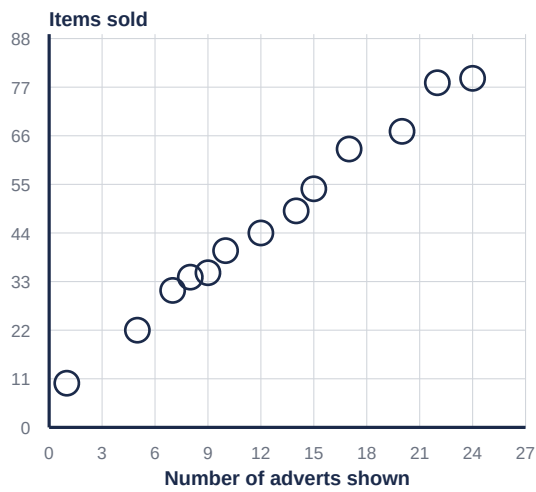
The scatter graph shows distance driven (miles) plotted against petrol remaining (litres) for a sample of journeys. Write down the coordinates of the point where distance driven (miles) = 25.



Q6

[1 mark]

The scatter graph shows number of adverts shown plotted against items sold for a sample of shops. Write down the coordinates of the point where number of adverts shown = 9.



Q7

[1 mark]

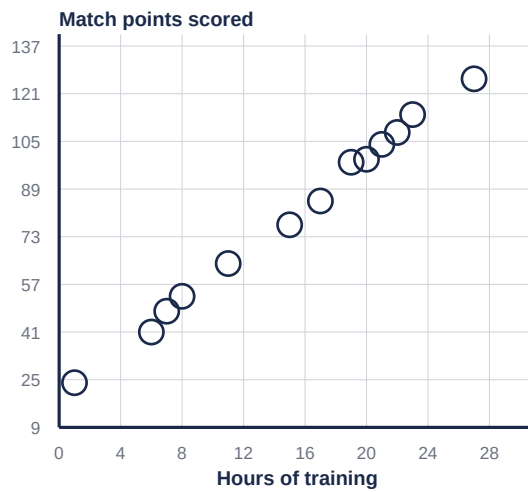
The scatter graph shows ticket price (£) plotted against tickets sold for a sample of concerts. Write down the coordinates of the point where ticket price (£) = 22.



Q8

[1 mark]

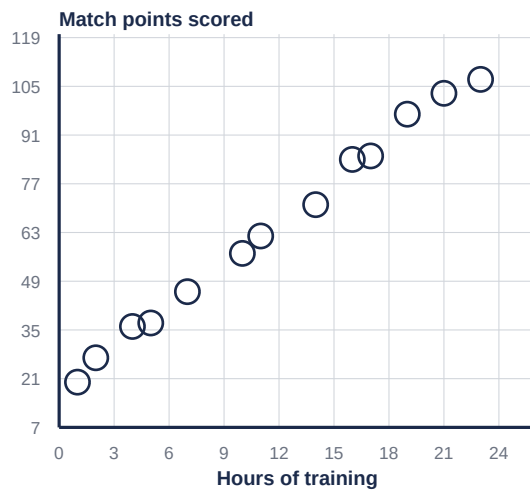
The scatter graph shows hours of training against match points scored for a sample of players. Describe the correlation shown by the scatter graph.



Q9

[1 mark]

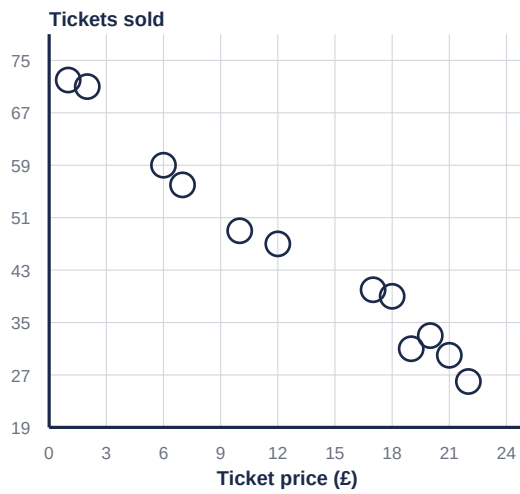
The scatter graph shows hours of training plotted against match points scored for a sample of players. Write down the coordinates of the point where hours of training = 11.



Q10

[1 mark]

The scatter graph shows ticket price (£) plotted against tickets sold for a sample of concerts. Write down the coordinates of the point where ticket price (£) = 6.



Q11

[3 marks]

A line of best fit for age of car (years) against value of car (£00s) for a sample of cars passes through the points (2, 12) and (7, 7). Find the equation of the line of best fit in the form $y = mx + c$.

Q12

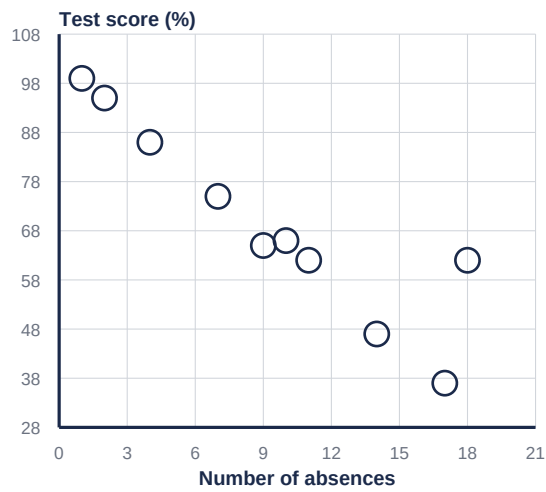
[3 marks]

A line of best fit for age of car (years) against value of car (£00s) for a sample of cars passes through the points (4, 36) and (10, 24). Find the equation of the line of best fit in the form $y = mx + c$.

Q13

[1 mark]

The scatter graph shows number of absences against test score (%) for a sample of students. One point does not fit the pattern of the rest of the data. Write down the coordinates of this outlier.



Q14

[3 marks]

A line of best fit for age of car (years) against value of car (£00s) for a sample of cars passes through the points (2, 11) and (6, 7). Find the equation of the line of best fit in the form $y = mx + c$.

Q15

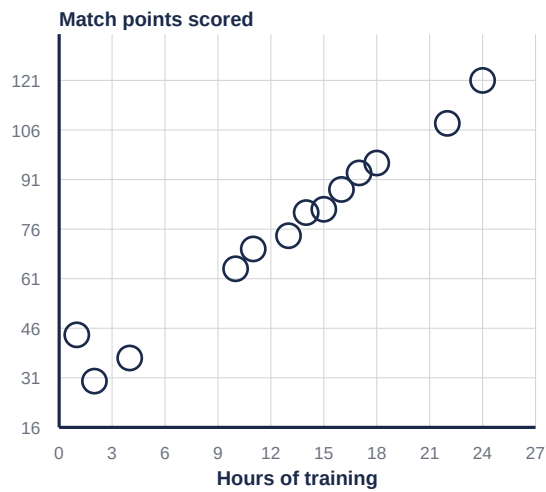
[3 marks]

A line of best fit for hours of training against match points scored for a sample of players passes through the points (4, 30) and (16, 60). Find the equation of the line of best fit in the form $y = mx + c$.

Q16

[1 mark]

The scatter graph shows hours of training against match points scored for a sample of players. One point does not fit the pattern of the rest of the data. Write down the coordinates of this outlier.



Q17

[3 marks]

A line of best fit for age of car (years) against value of car (£00s) for a sample of cars passes through the points (3, 17) and (7, 5). Find the equation of the line of best fit in the form $y = mx + c$.

Q18

[3 marks]

A line of best fit for ticket price (£) against tickets sold for a sample of concerts passes through the points (8, 21) and (16, 17). Find the equation of the line of best fit in the form $y = mx + c$.

Q19

[3 marks]

A line of best fit for number of adverts shown against items sold for a sample of shops passes through the points (8, 16) and (16, 28). Find the equation of the line of best fit in the form $y = mx + c$.

Q20

[3 marks]

A line of best fit for ticket price (£) against tickets sold for a sample of concerts passes through the points (1, 24) and (7, 18). Find the equation of the line of best fit in the form $y = mx + c$.

Q21

[4 marks]

A line of best fit for hours of training against match points scored for a sample of players, with data covering hours of training from 1 to 10, passes through the points (1, 21) and (10, 48). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate match points scored when hours of training = 12. (c) Comment on the reliability of this estimate.

Q22

[4 marks]

A line of best fit for age of car (years) against value of car (£00s) for a sample of cars, with data covering age of car (years) from 3 to 9, passes through the points (3, 41) and (9, 35). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate value of car (£00s) when age of car (years) = 13. (c) Comment on the reliability of this estimate.

Q23

[4 marks]

A line of best fit for number of absences against test score (%) for a sample of students passes through the points (3, 62) and (13, 32). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate test score (%) when number of absences = 7.

Q24

[4 marks]

A line of best fit for distance driven (miles) against petrol remaining (litres) for a sample of journeys, with data covering distance driven (miles) from 2 to 9, passes through the points (2, 65) and (9, 44). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate petrol remaining (litres) when distance driven (miles) = 14. (c) Comment on the reliability of this estimate.

Q25

[4 marks]

A line of best fit for ticket price (£) against tickets sold for a sample of concerts passes through the points (6, 32) and (20, 11). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate tickets sold when ticket price (£) = 14.

Q26

[4 marks]

A line of best fit for number of absences against test score (%) for a sample of students passes through the points (1, 44) and (10, 35). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate test score (%) when number of absences = 9.

Q27

[4 marks]

A line of best fit for distance driven (miles) against petrol remaining (litres) for a sample of journeys passes through the points (3, 31) and (12, 22). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate petrol remaining (litres) when distance driven (miles) = 8.

Q28

[4 marks]

A line of best fit for age of car (years) against value of car (£00s) for a sample of cars passes through the points (3, 27) and (9, 21). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate value of car (£00s) when age of car (years) = 5.

Q29

[4 marks]

A line of best fit for hours of revision against exam score (%) for a sample of students, with data covering hours of revision from 2 to 9, passes through the points (2, 20) and (9, 27). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate exam score (%) when hours of revision = 12. (c) Comment on the reliability of this estimate.

Q30

[4 marks]

A line of best fit for hours of revision against exam score (%) for a sample of students, with data covering hours of revision from 1 to 9, passes through the points (1, 29) and (9, 37). (a) Find the equation of the line of best fit in the form $y = mx + c$. (b) Use your equation to estimate exam score (%) when hours of revision = 14. (c) Comment on the reliability of this estimate.