



ACHIEVE ACADEMY

GCSE Maths — Foundation 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: 55

● Scatter Graphs & Correlation

✓ No correlation

Q1 · ● Developing · 1 mark

METHOD

The points show no clear pattern or trend.

✓ (1, 55)

Q2 · ● Developing · 1 mark

METHOD

Read the point directly above 1 on the graph: (1, 55)

✓ Negative correlation

Q3 · ● Developing · 1 mark

METHOD

The points show a clear negative correlation pattern.

✓ Positive correlation

Q4 · ● Developing · 1 mark

METHOD

The points show a clear positive correlation pattern.

✓ Negative correlation

Q5 · ● Developing · 1 mark

METHOD

The points show a clear negative correlation pattern.

✓ Positive correlation

Q6 · ● Developing · 1 mark

METHOD

The points show a clear positive correlation pattern.

✓ Negative correlation

Q7 · ● Developing · 1 mark

METHOD

The points show a clear negative correlation pattern.

✓ (8, 20)

Q8 · ● Developing · 1 mark

METHOD

Read the point directly above 8 on the graph: (8, 20)

✓ Negative correlation

Q9 · ● Developing · 1 mark

METHOD

The points show a clear negative correlation pattern.

✓ (5, 28)

Q10 · ● Developing · 1 mark

METHOD

Read the point directly above 5 on the graph: (5, 28)

✓ 30

Q11 · ● Secure · 2 marks

METHOD

Reading from the line of best fit at age of car (years) = 7: 30

✓ 43

Q12 · ● Secure · 2 marks

METHOD

Reading from the line of best fit at hours of revision = 12: 43

✓(3, 5)

Q13 · ● Secure · 1 mark

METHOD

The point (3, 5) lies well away from the trend of the other points.

✓(4, 41)

Q14 · ● Secure · 1 mark

METHOD

The point (4, 41) lies well away from the trend of the other points.

✓39

Q15 · ● Secure · 2 marks

METHOD

Reading from the line of best fit at number of absences = 4.39

✓(9, 65)

Q16 · ● Secure · 1 mark

METHOD

The point (9, 65) lies well away from the trend of the other points.

✓22

Q17 · ● Secure · 2 marks

METHOD

Reading from the line of best fit at ticket price (£) = 9.22

✓46

Q18 · ● Secure · 2 marks

METHOD

Reading from the line of best fit at ticket price (£) = 6.46

✓(13, 28)

Q19 · ● Secure · 1 mark

METHOD

The point (13, 28) lies well away from the trend of the other points.

✓(7, 47)

Q20 · ● Secure · 1 mark

METHOD

The point (7, 47) lies well away from the trend of the other points.

✓ $y = -2x + 32$

Q21 · ● Greater Depth · 3 marks

METHOD

$$\text{Gradient} = (10 - 24) \div (11 - 4) = -2$$

$$24 = -2 \times 4 + c \rightarrow c = 32$$

$$\text{Equation: } y = -2x + 32$$

✓20; This is interpolation — the estimate is within the range of the data, so it should be reliable.

Q22 · ● Greater Depth · 3 marks

METHOD

$$y = 2 \times 8 + 4 = 20$$

This is interpolation — the estimate is within the range of the data, so it should be reliable.

✓24; This is extrapolation — the estimate is outside the range of the data, so it may not be reliable.

Q23 · ● Greater Depth · 3 marks

METHOD

$$y = -1 \times 24 + 48 = 24$$

This is extrapolation — the estimate is outside the range of the data, so it may not be reliable.

✓ 56; This is extrapolation — the estimate is outside the range of the data, so it may not be reliable.

Q24 · ● Greater Depth · 3 marks

METHOD

$$y = 2 \times 22 + 12 = 56$$

This is extrapolation – the estimate is outside the range of the data, so it may not be reliable.

✓ $y = -3x + 52$

Q25 · ● Greater Depth · 3 marks

METHOD

$$\text{Gradient} = (16 - 43) \div (12 - 3) = -3$$

$$43 = -3 \times 3 + c \rightarrow c = 52$$

$$\text{Equation: } y = -3x + 52$$

✓ $y = 2x + 14$

Q26 · ● Greater Depth · 3 marks

METHOD

$$\text{Gradient} = (32 - 24) \div (9 - 5) = 2$$

$$24 = 2 \times 5 + c \rightarrow c = 14$$

$$\text{Equation: } y = 2x + 14$$

✓ 7; This is extrapolation — the estimate is outside the range of the data, so it may not be reliable.

Q27 · ● Greater Depth · 3 marks

METHOD

$$y = 3 \times 1 + 4 = 7$$

This is extrapolation – the estimate is outside the range of the data, so it may not be reliable.

✓ 42; This is extrapolation — the estimate is outside the range of the data, so it may not be reliable.

Q28 · ● Greater Depth · 3 marks

METHOD

$$y = 1 \times 21 + 21 = 42$$

This is extrapolation – the estimate is outside the range of the data, so it may not be reliable.

✓ $y = 3x + 13$

Q29 · ● Greater Depth · 3 marks

METHOD

$$\text{Gradient} = (52 - 22) \div (13 - 3) = 3$$

$$22 = 3 \times 3 + c \rightarrow c = 13$$

$$\text{Equation: } y = 3x + 13$$

✓ 36; This is extrapolation — the estimate is outside the range of the data, so it may not be reliable.

Q30 · ● Greater Depth · 3 marks

METHOD

$$y = -1 \times 1 + 37 = 36$$

This is extrapolation — the estimate is outside the range of the data, so it may not be reliable.