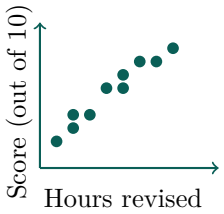
Scatter Graphs and Correlation

GCSE Mathematics • **Foundation Tier** • Grades 3–5 • Non-calculator

Name: _____ Class: _____ Total: _____ / 43

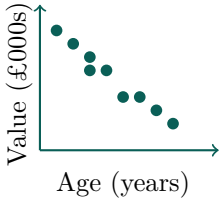
Show all your working. Marks are given for correct method as well as the final answer.

1. Describe the correlation shown by this scatter graph. **[1 mark]**



Answer: _____

2. Describe the correlation shown by this scatter graph. **[1 mark]**



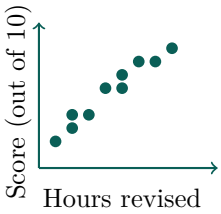
Answer: _____

3. Describe the correlation shown by this scatter graph. **[1 mark]**



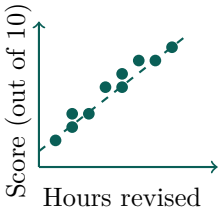
Answer: _____

4. Write down what the revision graph suggests about revising and scoring well. **[1 mark]**



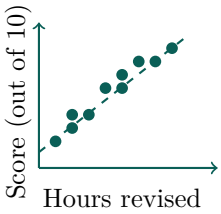
Answer: _____

5. A line of best fit has been drawn. Use it to estimate the score for 4 hours of revision. **[2 marks]**



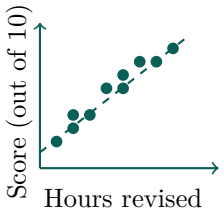
Answer: _____

6. Use the line of best fit to estimate the hours revised by someone scoring 8. **[2 marks]**



Answer: _____

7. Explain why the line of best fit should not be used to estimate the score for 20 hours of revision. **[2 marks]**

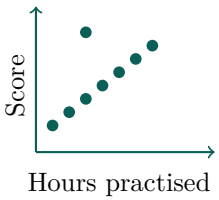


Answer: _____

8. Write down two rules for drawing a good line of best fit. **[2 marks]**

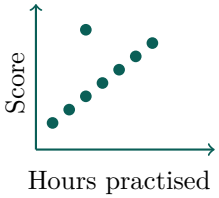
Answer: _____

9. One point on this graph does not fit the pattern. Write down its coordinates. **[2 marks]**



Answer: _____

10. Explain what should be done with that point when drawing a line of best fit. **[2 marks]**



Answer: _____

11. A student says *bigger feet cause higher test scores*. Use the shoe-size graph to explain why this is wrong. **[2 marks]**



Answer: _____

12. Ice-cream sales and drowning numbers both rise in summer. Explain why this does not mean ice cream causes drowning. **[2 marks]**

Answer: _____

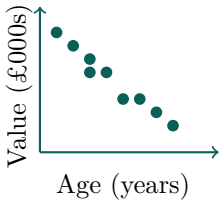
13. Write down the type of correlation you would expect between the temperature and the number of coats sold. **[1 mark]**

Answer: _____

14. Write down the type of correlation you would expect between the height and the arm span of a person. **[1 mark]**

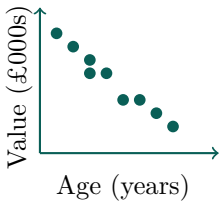
Answer: _____

15. Use the car graph to estimate the value of a car that is 5 years old. **[2 marks]**



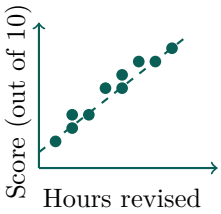
Answer: _____

16. Explain why the car graph cannot sensibly predict the value of a 30-year-old car. **[2 marks]**



Answer: _____

17. The line of best fit on the revision graph passes through $(0, 1)$ and $(8, 9)$.



(a) Work out its gradient. **[3 marks]**

(b) Explain what the gradient means in context. **[2 marks]**

Answer: _____

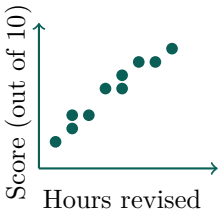
18. A scatter graph of 12 plants shows water given against height grown.

(a) Write down what positive correlation would mean here. **[2 marks]**

(b) Explain why very heavy watering might break that pattern. **[2 marks]**

Answer: _____

19. Two students draw different lines of best fit on the same scatter graph.



(a) Explain why their estimates can differ. **[2 marks]**

(b) Write down which estimate is more reliable: one inside the data or one outside it. **[2 marks]**

Answer: _____

20. The table shows six pupils' hours of sleep and their reaction times. The correlation is negative.

(a) Write down what negative correlation means here. **[2 marks]**

(b) A seventh pupil sleeps 9 hours. Explain whether you can be sure of their reaction time. **[2 marks]**

Answer: _____

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