

AS Level Maths: Correlation

- 1 A football coach measured the heights and weights of 12 players, The data is shown below.

Height (cm)	188	194	178	175	185	175	188	193	180	190	181	169
Weight (kg)	70	100	83	69	77	58	90	86	71	94	68	61

- (a) Draw a scatter graph for this information.
- (b) Give an interpretation of the correlation between the height and weight of the footballers.
- The equation of the regression line is $w = 1.37h - 173$
- (c) Give an interpretation of the gradient of this regression line.
- (d) Use the equation of the regression line to estimate the weight of a player who is 170cm tall.
- (e) Comment on the reliability of your estimate in part (d), giving a reason for your answer.

(Total for question 1 is 7 marks)

- 2 Ross did an investigation into the relationship between study into temperature (t) and total hours of sunshine (s) at Heathrow. He finds that the equation of the regression line is $s = 0.25t + 1.3$.

Give an interpretation of the figure 0.25 figure in this regression line.

(Total for question 2 is 1 marks)

- 3 Tony is investigating the relationship between his daily energy bill in pounds (e) and the average daily temperature in degrees (t) each day in the winter.

He finds that the equation of the regression line is $e = 7.3 - 0.4t$

- (a) Describe the correlation between Tony's bill and the average daily temperature. (1)
- (b) Give an interpretation of the gradient of this regression line. (1)
- (c) Explain why this model might not be appropriate for Tony's energy bill in the summer. (1)

(Total for question 3 is 3 marks)