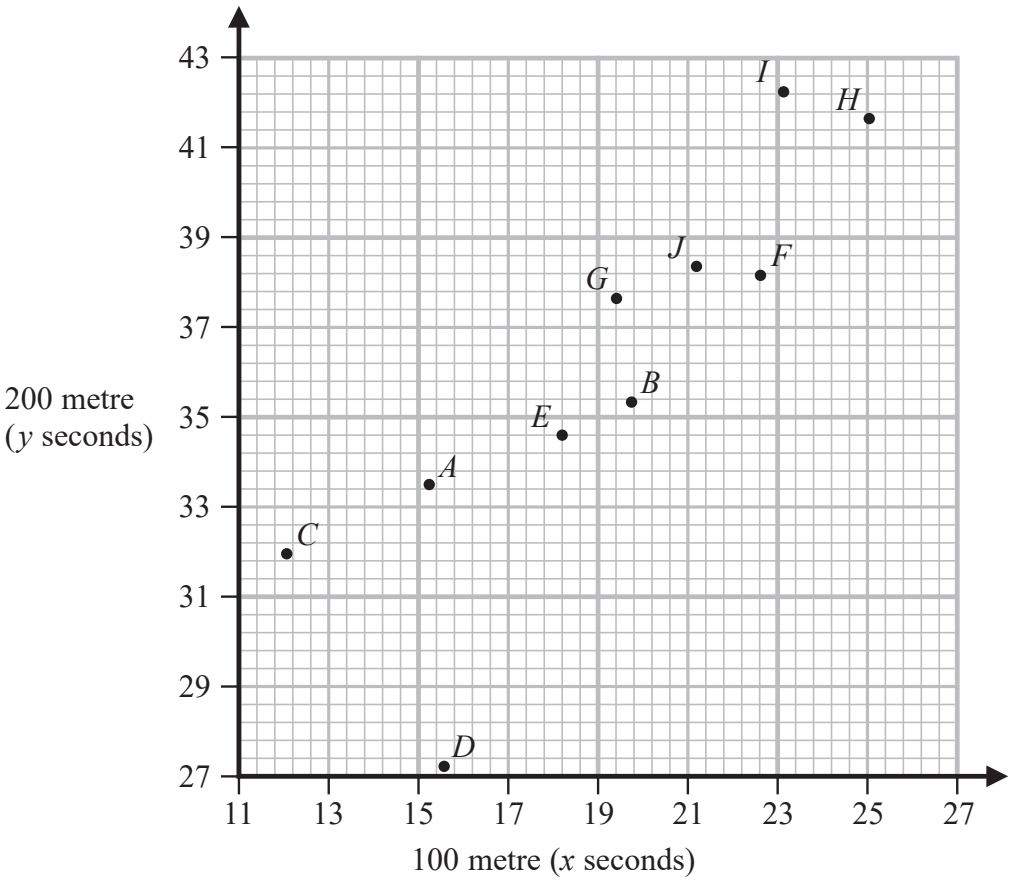
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4. A random sample of 10 boys A, B, C, D, E, F, G, H, I and J is taken from a junior athletics club. Each boy selected is asked to run a 100 metre race and a 200 metre race. The time taken, x seconds, by each boy to run the 100 metre race is recorded and the time taken, y seconds, by each boy to run the 200 metre race is recorded. The results are plotted on the scatter diagram below.



(a) State, without calculation, which of the 3 values below is most likely to be a value of the product moment correlation coefficient for the data in the scatter diagram.

0.72 0.05 0.95

(1)

In the sample of 10 boys, one is a junior champion 100 metre runner and one is a junior champion 200 metre runner.

(b) Write down the boy who is most likely to be the 100 metre junior champion.

(1)

The data for the two junior champions are removed and the remaining data are summarised below

$\sum x^2 = 3445.26$ $\sum x = 164.4$ $S_{yy} = 67.52$ $S_{xy} = 60.85$

(c) (i) Calculate the value of the product moment correlation coefficient for the remaining data.

(3)

(ii) Comment, in context, on the value of the product moment correlation coefficient that you obtained in part (i).

(1)

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Question 4 continued

Q4

(Total 6 marks)