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3. In a singing competition, 9 people are asked to sing individually. Jamil is blindfolded and asked to rank the 9 singers in order of increasing age by listening to their voices.

Jamil places them in the order *B C A G F I E H D*

The actual ages, in years, of the 9 singers are shown in the table below.

Singer	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*
Age	15	23	32	50	45	22	19	63	54

(a) Calculate Spearman's rank correlation coefficient between Jamil's order and the actual order.

(5)

(b) Stating your hypotheses clearly, test whether or not there is evidence to suggest that Jamil can rank singers in order of age by listening to them sing. Use a 5% level of significance.

(4)

(c) Explain, without doing any further calculations, how you would find the rank correlation if singer *F*'s age was recorded incorrectly and is 23 rather than 22

(2)

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Question 3 continued

(Total 11 marks)

Q3