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3. Each of 7 athletes competed in a 200 metre race and a 400 metre race.

The table shows the time, in seconds, taken by each athlete to complete the 200 metre race.

Athlete	*A*	*B*	*C*	*D*	*E*	*F*	*G*
200 metre race (seconds)	23.4	23.1	22.9	23.7	27.6	24.4	24.1

The finishing order in the 400 metre race is shown below, with athlete *A* finishing in the fastest time.

A *B* *G* *C* *D* *F* *E*

(a) Calculate the Spearman's rank correlation coefficient between the finishing order in the 200 metre race and the finishing order in the 400 metre race.

(5)

(b) Stating your hypotheses clearly, test whether or not there is evidence of a positive correlation between the finishing order in the 200 metre race and the finishing order in the 400 metre race. Use a 5% level of significance.

(4)

The 7 athletes also competed in a long jump competition with the following results.

Athlete	*A*	*B*	*C*	*D*	*E*	*F*	*G*
Long jump (metres)	6.50	6.47	6.12	6.12	6.48	6.38	6.47

Yuliya wants to calculate the Spearman's rank correlation coefficient between the finishing order in the 200 metre race and the finishing order in the long jump for these athletes.

(c) Without carrying out any further calculations, explain how Yuliya should do this.

(2)

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Question 3 continued

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Q3