

STEP II, 2019, Q7 EC

This was the least popular of the Pure questions. Good solutions to this question often included clear diagrams to enable the angles being discussed to be identified easily. Many of the candidates were able to calculate the value of $\mathbf{a} \cdot \mathbf{b}$ correctly, but often did not fully justify that the triangle ABC was equilateral.

For the second part, many candidates were again able to establish the relationship between scalar products, but less success was seen in identifying the type of quadrilateral. In the final part there were a large number of different approaches taken and many of these were completed successfully by some of the candidates.



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