

STEP II, 2007, Q4 EC

- 4 This question was found to be very difficult. The initial factorisation was beyond most candidates, even given the linear factor $x + b + c$. Anyone who wants to read Mathematics at university must be able to factorise quickly cubic expressions such as this one, and also $x^3 \pm y^3$. The *Hints and Answers* document discusses this in more detail.

Candidates who progressed to the second part of the question often deduced that $ak^2 + bk + c = 0$ and $bk^2 + ck + a = 0$, but then tried to eliminate k ; given that the result they were asked to derive was still in terms of k , this was an unwise strategy.



NextStepMaths.com

To view mark schemes, fully worked solutions and examiner's comments, and for more details about tutoring and other services offered, go to [NextStepMaths.com](https://www.NextStepMaths.com)