

STEP III, 2005, Q7 EC

- 7 This question was popular and almost all could obtain the general result quoted, with most being able to go on to use this result on the given integrals. Many could then complete the integration for (i), but very few knew how to tackle the integral $\int \frac{du}{u\sqrt{u+1}}$ in (ii). Candidates (perhaps because this was the most recent technique they had learnt) almost all saw this as an opportunity to substitute $u = \sinh^2 t$ or $u = \tan^2 t$, which will work in principle, but are not as

simple to execute correctly as $u = t^2 - 1$. Many perfectly satisfactory methods of integration not based on the general result given were also seen.



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)