

STEP II, 2008, Q7 EC

Q7 In many ways, part (i) of the question was very routine, requiring little more than technical competence to see the differential equation, using the given substitution, through to a correct solution. Part (ii) then required candidates to spot a slightly different substitution on the basis of having gained a feel for what had gone on previously. I had thought that many more candidates would try something involving the square root of $1 + x^3$ or the cube root of $1 + x^2$, rather than cube root of $1 + x^3$, but many solutions that I saw went straight for the right thing. Once this had been successfully pushed through – with the working mimicking that of (i) very closely indeed – it was not difficult to spot the general answer required, unproven, in (iii). Overall, however, it seems that a lot of candidates failed to spot the right thing for part (ii) and their solutions stopped at this point. With almost 600 attempts, the mean score on this question was 10.



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