

STEP III, 2010 Q8 EC

8. Three quarters of the candidates had a go at this, with moderate success. Most understood the method intended for part (i) and were aware of the method of using an integrating factor. Algebraic slips led to incorrect simultaneous equations in part (i), and few dealt with the non-uniqueness of $R(x)$ satisfactorily. Having found the integrating factor for part (ii), most did not proceed further. Some candidates introduced a sign error into part (ii) which trivialized the left hand side to a differential of a product. A small number of candidates produced elegant solutions to part (ii) using the tan half angle substitution.



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