

## STEP III, 2017, Q13 EC

### Question 13

A sixth of the candidates tried this, scoring slightly less well than was done on question 11. Almost everyone found  $V(x)$  correctly and the required result for  $E(Y)$ . Similar success was demonstrated finding  $V(x)$  in the uniform case. A lot did not then attempt to find the probability density function, but most who spotted it attempting to calculate the cumulative distribution function of  $Y$  first and then differentiate could do it. It was encouraging that so many correctly found the range of  $Y$ . A variety of methods of integration were used for the final result with varying success.



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