

## STEP III, 2014 , Q12 EC

12. Less than 8% tried this, scoring just over a quarter of the marks. Very few got the question totally correct, but a number got it mostly right. Nearly all managed the median of  $Y$ , but the probability density function of  $Y$  caused some to stumble. However the mode result, apart from some poor differentiation, was mostly alright. The explanation in part (iii) eluded some candidates who were otherwise strong. Applying the mode result in part (iv) to obtain  $\lambda$  surprisingly tripped up some merely through inaccurate differentiation. As one would hope, anyone that got as far as part (iv) spotted that the median of  $X$  was .



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