

## STEP II, 2014, Q7 EC

### Question 7

This was another of the less popular pure maths questions. The nature of this question meant that many solutions involved a series of sketches of graphs with very little written explanation. Most candidates were able to identify that the sloping edges of  $y = f(x)$  would have the same gradient as the sloping edges of  $y = g(x)$ , but many did not have both sloping edges overlapping for the two graphs. In some cases only one sloping edge of  $y = g(x)$  was drawn. A large number of candidates who correctly sketched the graphs identified the quadrilateral as a rectangle, rather than a square. In the second part of the question, sketches of the case with one solution often did not have the graph of  $y = |x - c|$  meeting the  $x$ -axis at one corner of the square identified in part (i), although many candidates were able to identify the different cases that could occur. Unfortunately in the final part of the question very few candidates used the result from the first part of the question and so considered a number of possibilities that do not exist for any values of  $a$ ,  $b$ ,  $c$  and  $d$ .



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