



STEP II, 2008, Q9 EC

Q9 Of the applied maths questions, this was by far the most popular, with over 400 attempts. However, most of these were only partial efforts, with few candidates even getting around to completing part (i) successfully, and the mean score ended up at about 8. Most candidates were comfortable with the routine stuff to start with, quoting and using the trajectory equation and using the identity $\sec^2\alpha = 1 + \tan^2\alpha$ to get a quadratic equation in $\tan\alpha$. For the remaining parts of the question, working was much less certain, even given the helpful information about small-angle approximations, and very few candidates were able to get a suitable approximation for $\tan\alpha$. Fewer still could turn an angle in radians into one in degrees.



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