



STEP II, 2012, Q11 EC

Q11 There were many very capable attempts at this question, taken by around a quarter of all candidates. At some stage, a general approach was required to the use of the principle of conservation of linear momentum; some resorted to “pattern-spotting” (which lost them a couple of marks) and others to an inductive approach, collision by collision, which worked well though was generally a lengthier bit of work. Some candidates mixed up n with N in the following part, while others incorrectly considered $>$ rather than \geq and ended up missing the answer by 1. A little bit of care was needed with the summation in the final part, and there was a bit of fiddling going on in order to get the given answer. Nevertheless, it was pleasing to see the principles understood well, even if the details were less carefully attended to.



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