# STEP II, 2008, Q10 EC

**Q10** Though much less popular than Q9, the attempts at this question followed a similar pattern, with most candidates coping pretty well with the routine opening demands – the use of the two main principles governing collisions questions: *Conservation of Linear Momentum* and *Newton's Experimental Law of Restitution* – but then falling down when a little more care and imagination were required in the parts that followed. With some careful application of ideas relating to similar triangles and a bit of inequalities work to follow, most candidates attempting these questions were just not up to the task. Few got as far as working on the initial and final kinetic energies; of these only a very small number noticed that there was a very quick way to go about it (see the *SOLUTIONS*). I don't recall seeing anyone successfully managing to get the right answer after having taken the longer route.