STEP III 2015 Question 9 — Examiner Report

Just over 20% attempted this, making it the most popular non-Pure question, and attempts at it were slightly less successful than question 1. Quite a few found the first required equation from applying Newton's 2^{nd} Law, when some made sign errors through not being careful with directions, and then integrating rather than from conserving energy. x_0 was found easily by the majority, and the expression for the acceleration was commonly still by Newton, though a lot of marks were lost by not substituting in $x = x_0$. The last part was poorly done in general with few getting more than an opening line, and if they made a sensible substitution, very few expanded it correctly. Not many even attempted the last part of the question.