

MATH10222, 2017, exam feedback

Section B, comments on the scripts:

- B6. This question was mostly very well done, being a minor variation on the theme of projectiles in a uniform gravitational field. There were still some scripts that confused vectors and scalars, or did not distinguish between the two in terms of the notation.
- B7. Apart from the odd algebraic error this was generally well answered, being a fairly standard ‘potential well’ question. Surprisingly few students could answer the very last part – this material was covered at some length in the lecture notes and the methodology was repeated in a final revision lecture when covering the sample exam paper.
- B8. A standard ‘path equation’ question. Those with a good grasp of the chain rule were able to derive the path equation without too much effort. The solution of the path equation in part (ii) was generally well answered.
- A handful of students did not understand that the “dot notation” indicates differentiation with respect to time – this was used quite extensively in *both* halves of the lecture course. Those without a good grasp of the chain rule often attempted to ‘bluff’ their way to the stated path equation result, with a corresponding lack of achieved marks.
- B9. This was the least popular question, but essentially reduced to finding the integral of F_{ring} from 0 to R . A few responses over-complicated the integral, which can be obtained directly and relatively simply, for example by substitution of $s = h^2 + r^2$.