

Example 6: Path of quickest descent

Subject: Mathematics: analysis and approaches and mathematics: applications and interpretation.

Paper component: Internal assessment, standard level (SL) and higher level (HL)

Assessment

Criterion	A	B	C	D	E (SL)	E (SL)	Total (SL)	Total (HL)
Achievement level awarded	2	2	1	1	3	2	9	8
Maximum possible achievement level	4	4	3	3	6	6	20	20

Comments

Criterion	Comments
A Presentation	The exploration is not really well organized, and it is repetitive in places so not concise.
B Mathematical communication	Although there are various mathematical representations, parameters are not explained, for example in the explanation of “equation of the brachistochrone” and “what is a differential equation?”
C Personal engagement	The candidate merely transcribed bookwork and then used simulations. There was little originality in the work and the simulations seem to have been added without any proper aim apart from visual comparison.
D Reflection	No reflection is seen throughout the exploration, apart from reference to the effect of friction.
E Use of mathematics SL	The mathematics used is beyond the level of the course and the student demonstrates limited knowledge and understanding.
E Use of mathematics HL	Some relevant mathematics is produced but only limited knowledge and understanding is demonstrated.
General comments	This exploration does contain some mathematics that is relevant, however it appears to have been beyond the comprehension of the student and hence there are few meaningful explanations and feels as if it were transcribed from a source.