

Example 16: Solar panels

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 (HL)	Total (SL)	Total (HL)
Achievement level awarded	4	4	3	3	6	6	20	20
Maximum possible achievement level	4	4	3	3	6	6	20	20

Comments

Criterion	Comments
A Presentation	The exploration is interesting and ambitious but very well executed. Although the use of a programme written by a candidate cannot be checked by a mathematics teacher not conversant with programming it did not detract from the coherence as this would have been the case had the student used an applet to obtain the graph. On the other hand some more explanation would have made the work more coherent, for example, on page 9 when integrating with respect to θ_i to obtain $f(\theta)$.
B Mathematical communication	The student uses a variety of mathematical representation consistently. All of these are appropriate.
C Personal engagement	The student voice can be heard throughout the exploration. Personal engagement is authentic; this is also demonstrated in the way that the student develops the model.
D Reflection	There is critical reflection throughout the exploration which helps in the development of the model.
E Use of mathematics SL	Mathematics is beyond standard level and is excellently done.
E Use of mathematics HL	The mathematics is beyond the higher level syllabus but it is very well presented. Knowledge and understanding are demonstrated.
General comments	This type of exploration should only be attempted by a higher level student.