

Higher Maths
SQA 2019 Paper 2
Question 9



Electricity on a spacecraft can be produced by a type of nuclear generator.

The electrical power produced by this generator can be modelled by

$$P_t = 120e^{-0.0079t}$$

where P_t is the electrical power produced, in watts, after t years.

- (a) Determine the electrical power initially produced by the generator. 1
- (b) Calculate how long it takes for the electrical power produced by the generator to reduce by 15%. 4
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Answers:

- (a) 120 watts
- (b) 20.57 years