

## 2019 P2 Q9

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.
- (b) Calculate how long it takes for the electrical power produced by the generator to reduce by 15%.

## Answers

(a) *Power initially produced = 120 W*

(b) *20.572 ... years*