10   Charlie buys a car for £18 000 on 1 January 2016.

The value of the car decreases exponentially.

The car has a value of £12 000 on 1 January 2018.

10 (a)   Charlie says:

- because the car has lost £6000 after two years, after another two years it will be worth £6000.

Charlie's friend Kaya says:

- because the car has lost one third of its value after two years, after another two years it will be worth £8000.

Explain whose statement is correct, justifying the value they have stated.

[2 marks]

10 (b)   The value of Charlie's car, £V, t years after 1 January 2016 may be modelled by the equation

$$V = Ae^{-kt}$$

where A and k are positive constants.

Find the value of t when the car has a value of £10 000, giving your answer to two significant figures.

[5 marks]

10 (c)   Give a reason why the model, in this context, will not be suitable to calculate the value of the car when $t = 30$

[1 mark]