

4. The value V , in thousands of pounds, of a new car, t years after it is first sold, is modelled by the differential equation

$$5 \frac{dV}{dt} + 2V = 5e^{-0.4t} \cos\left(\frac{t}{2}\right) \quad t \geq 0$$

Given that the value of the car when it is first sold is £10 000

- (a) find, according to the model, the value of the car 8 years after it was first sold.

(5)

- (b) Give a limitation of the model.

(1)