

7. In a simple model, the value,  $\pounds V$ , of a car depends on its age,  $t$ , in years.

The following information is available for car  $A$

- its value when new is  $\pounds 20\,000$
- its value after one year is  $\pounds 16\,000$

(a) Use an exponential model to form, for car  $A$ , a possible equation linking  $V$  with  $t$ . (4)

The value of car  $A$  is monitored over a 10-year period.

Its value after 10 years is  $\pounds 2\,000$

(b) Evaluate the reliability of your model in light of this information. (2)

The following information is available for car  $B$

- it has the same value, when new, as car  $A$
- its value depreciates more slowly than that of car  $A$

(c) Explain how you would adapt the equation found in (a) so that it could be used to model the value of car  $B$ . (1)