**12.** The value, £$V$, of a vintage car $t$ years after it was first valued on 1st January 2001, is modelled by the equation

$$V = Ap^t \qquad \text{where } A \text{ and } p \text{ are constants}$$

Given that the value of the car was £32 000 on 1st January 2005 and £50 000 on 1st January 20

(a) (i) find $p$ to 4 decimal places,

(ii) show that $A$ is approximately 24 800

**(4)**

(b) With reference to the model, interpret

(i) the value of the constant $A$,

(ii) the value of the constant $p$.

**(2)**

Using the model,

(c) find the year during which the value of the car first exceeds £100 000

**(4)**