11.

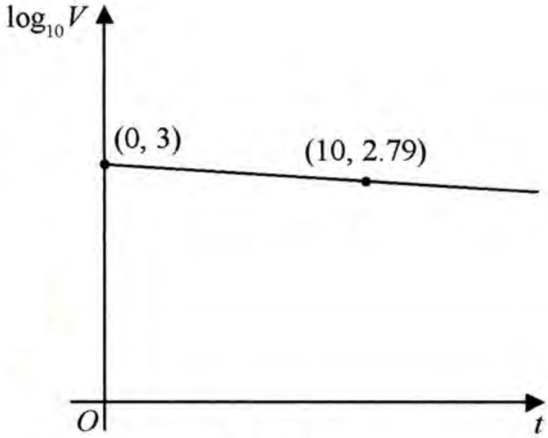

Figure 2

The value, V pounds, of a mobile phone, t months after it was bought, is modelled by

$$V = ab^t$$

where a and b are constants.

Figure 2 shows the linear relationship between $\log_{10} V$ and t.

The line passes through the points (0, 3) and (10, 2.79) as shown.

Using these points,

(a) find the initial value of the phone, **(2)**

(b) find a complete equation for V in terms of t, giving the exact value of a and giving the value of b to 3 significant figures. **(3)**

Exactly 2 years after it was bought, the value of the phone was £320

(c) Use this information to evaluate the reliability of the model. **(2)**