**7.**

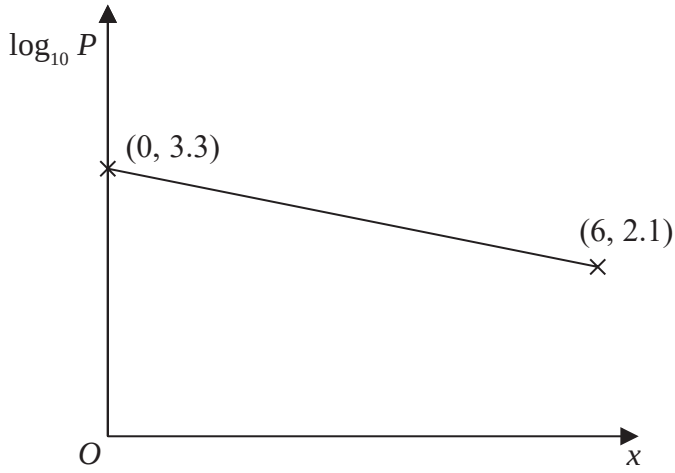


**Figure 2**

A chimney emits smoke particles.

On a particular day, the concentration of smoke particles in the air emitted by this chimney, $P$ parts per million, is measured at various distances, $x$ km, from the chimney.

Figure 2 shows a sketch of the linear relationship between $\log_{10} P$ and $x$ that is used to model this situation.

The line passes through the point (0, 3.3) and the point (6, 2.1)

(a) Find a complete equation for the model in the form

$$P = ab^x$$

where $a$ and $b$ are constants. Give the value of $a$ and the value of $b$ each to 4 significant figures.

**(4)**

(b) With reference to the model, interpret the value of $ab$

**(1)**