

9. A student studies two sets of data, y and x .

The student plots a graph of the values of $\log_{10} y$ against the values of $\log_{10} x$

The points on the graph lie on the straight line with equation

$$\log_{10} y = \frac{2}{3} \log_{10} x - 1$$

(a) Show that the relationship linking x and y may be written in the form

$$y = px^q$$

where p and q are constants to be found.

(4)

(b) Hence, or otherwise, find the exact value of y when $x = 100$

Write your answer in the form 10^k where k is a constant.

(2)