

The variables  $x$  and  $y$  satisfy the equation  $y^n = Ax^3$ , where  $n$  and  $A$  are constants. It is given that  $y = 2.58$  when  $x = 1.20$ , and  $y = 9.49$  when  $x = 2.51$ .

(i) Explain why the graph of  $\ln y$  against  $\ln x$  is a straight line. [2]

(ii) Find the values of  $n$  and  $A$ , giving your answers correct to 2 decimal places. [4]