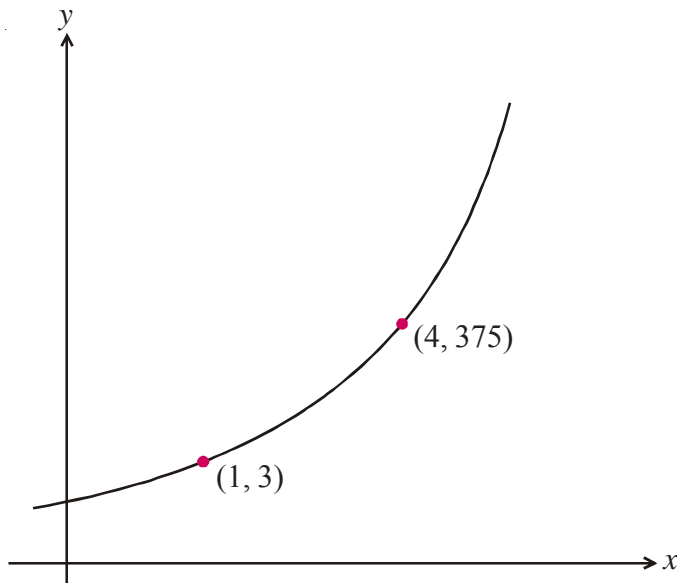




1)



The sketch-graph shows a curve with equation $y = pq^x$.

The curve passes through the points (1, 3) and (4, 375).

Calculate the value of p and the value of q .



2) The graph shows the number of bacteria living in a petri dish.

The number N of bacteria at time t is given by the relation:

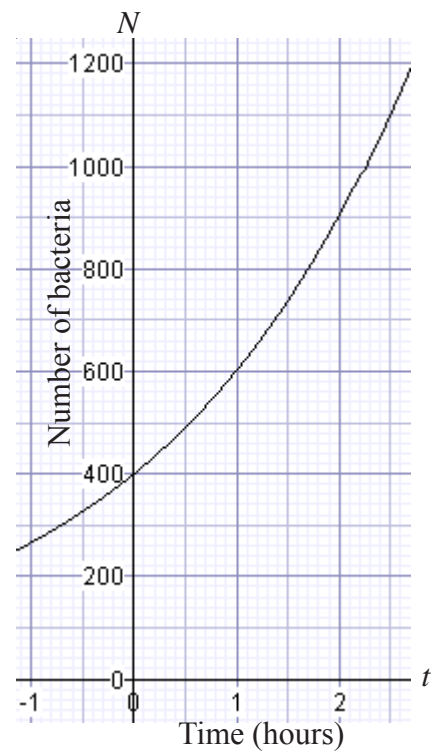
$$N = a \times b^t$$

The curve passes through the point (0, 400).

a) Use this information to show that $a = 400$.

The curve also passes through (2, 900).

b) Use this information to find the value of b .



c) Work out the number of bacteria in the dish at time $t = 3$.