Question 2: If $3^x = 4^{x-1}$, then $x =$

Solution:

Given that $3^x = 4^{x-1}$

Take log on both sides

$\log 3^x = \log 4^{x-1}$

$x \ln 3 = (x-1) \ln 4$

$= x \ln 4 - \ln 4$

$\ln 4 = x(\ln 4 - \ln 3)$

So $x = \ln 4/(\ln 4 - \ln 3)$

$= 1/(1 - \ln 3/\ln 4)$

$= 1/(1 - \log_4 3)$

Hence the value of x is $1/(1 - \log_4 3)$.