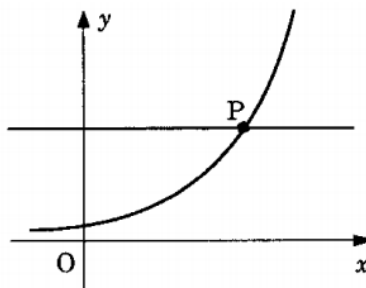


Higher Homework 2 – Exponentials and Laws of Logs

1. The diagram shows part of the graph $y = 3^x$ and the straight line $y = 43$

These graphs intersect at point P



Solve algebraically the equation $3^x = 43$, and hence write down, correct to three decimal places, the coordinates of point P

3

2. Evaluate $\log_5 2 + \log_5 50 - \log_5 4$

3

3. Given that $\log_3(2x-1) + \log_3(3x) = \log_3 45$, find the value of x .

5

4. By taking logarithms **in the base three** of both sides of the following equation, find algebraically the value of x

$$27^{x-1} = 9^{2x-4}$$

4