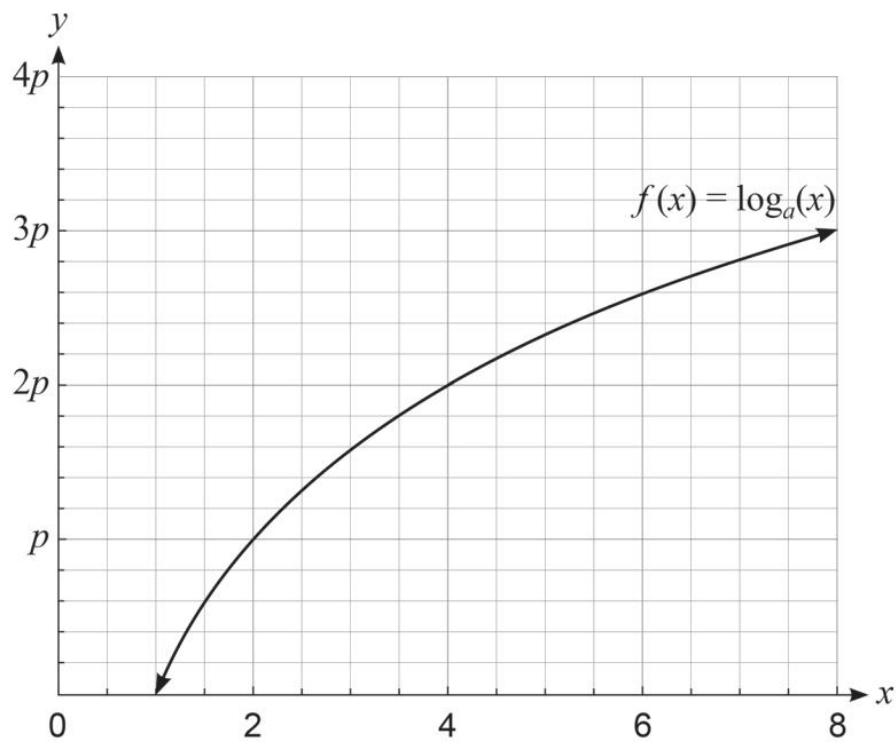## Question 5 (8 marks)

The function $f(x) = \log_a(x)$ is plotted below, where a and p are constants.

(a)   Express $\log_a(0.5)$ in terms of p. (2 marks)
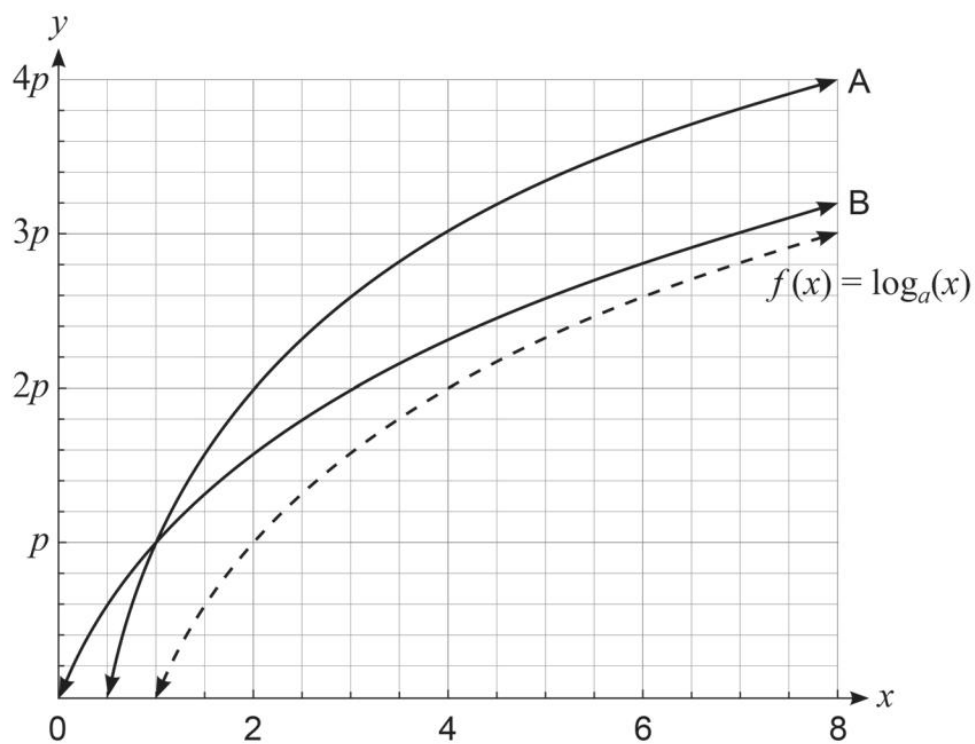
(b)   Evaluate a^{5p}. (2 marks)

(c)   Solve $\log_a(x - 3) = 3p$ for x.   (2 marks)

The function $f(x) = \log_a(x)$ has been transformed to give two other logarithmic functions with base a on the axes as shown below.

(d)   Determine an equation for each of the **two** functions, A and B.   (2 marks)