3 In this question a and b are constants.

The normal to the curve $y = \frac{a}{x} + 3x - 2$ at the point where $x = 1$ has equation $y = -\frac{1}{4}x + b$.
Find the values of a and b. [6]

4 Solve the equation $\log_3(11x-8) = 1 + \dfrac{2}{\log_x 3}$ given that $x > 1$. [5]