1 **(a)** Solve the equation $5^{w-1} = 12$, giving your answer correct to 2 decimal places. [2]

(b) Solve the equation $x^{\frac{2}{3}} - 5x^{\frac{1}{3}} + 6 = 0$. [3]

2 **(a)** Write $2\lg x - \left(\lg(x+6) + \lg 3\right)$ as a single logarithm to base 10. [2]

(b) Hence solve the equation $2\lg x - \left(\lg(x+6) + \lg 3\right) = 0$. [4]