# Exercise 1.1 (AS Pure Maths)

**1** Given that $y = \frac{1}{8}x^3$, express the following in the form $kx^n$, where $k$ and $n$ are constants.

(a) $y^{\frac{1}{3}}$ (b) $3y^{-1}$

**2** Show that $\frac{3}{\sqrt{27}-\sqrt{18}}$ can be written in the form $\sqrt{a}+\sqrt{b}$, where $a$ and $b$ are integers.

**3** Expand and simplify $(\sqrt{7}-3)(3-\sqrt{7})$

**4** Factorise completely $x - 49x^3$

**5** Express $8^{3x+1}$ in the form $2^y$, stating $y$ in terms of $x$.