

- 5** **(i)** Sketch, on the same diagram, the graphs of $y = \sin x$ and $y = \cos 2x$ for $0^\circ \leq x \leq 180^\circ$. [3]
- (ii)** Verify that $x = 30^\circ$ is a root of the equation $\sin x = \cos 2x$, and state the other root of this equation for which $0^\circ \leq x \leq 180^\circ$. [2]
- (iii)** Hence state the set of values of x , for $0^\circ \leq x \leq 180^\circ$, for which $\sin x < \cos 2x$. [2]