

- 8** The function $f : x \mapsto 5 + 3 \cos\left(\frac{1}{2}x\right)$ is defined for $0 \leq x \leq 2\pi$.
- (i) Solve the equation $f(x) = 7$, giving your answer correct to 2 decimal places. [3]
- (ii) Sketch the graph of $y = f(x)$. [2]
- (iii) Explain why f has an inverse. [1]
- (iv) Obtain an expression for $f^{-1}(x)$. [3]