

- 8** The function  $f$  is defined by  $f(x) = a + b \cos 2x$ , for  $0 \leq x \leq \pi$ . It is given that  $f(0) = -1$  and  $f(\frac{1}{2}\pi) = 7$ .
- (i) Find the values of  $a$  and  $b$ . [3]
- (ii) Find the  $x$ -coordinates of the points where the curve  $y = f(x)$  intersects the  $x$ -axis. [3]
- (iii) Sketch the graph of  $y = f(x)$ . [2]