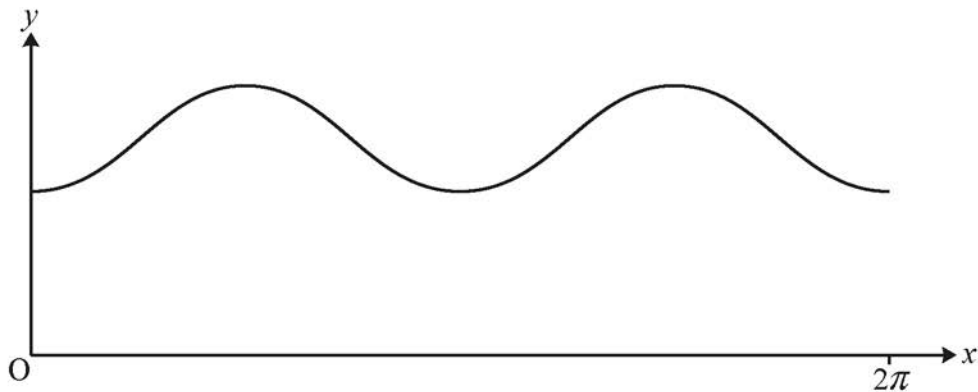


- 10 The diagram shows the graph of  $y = 1.5 + \sin^2 x$  for  $0 \leq x \leq 2\pi$ .



- (a) Show that the equation of the graph can be written in the form  $y = a - b \cos 2x$  where  $a$  and  $b$  are constants to be determined. [2]
- (b) Write down the period of the function  $1.5 + \sin^2 x$ . [1]
- (c) Determine the  $x$ -coordinates of the points of intersection of the graph of  $y = 1.5 + \sin^2 x$  with the graph of  $y = 1 + \cos 2x$  in the interval  $0 \leq x \leq 2\pi$ . [3]