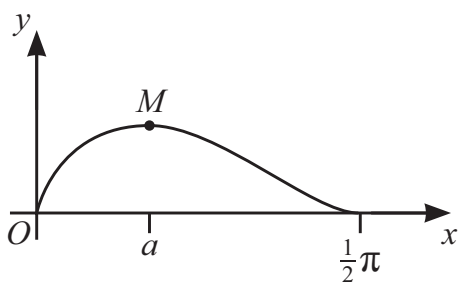
11



The diagram shows the curve $y = \cos x\sqrt{\sin 2x}$ for $0 \leqslant x \leqslant \frac{1}{2}\pi$. The curve has a maximum point at M, where $x = a$.

(a) Find the exact value of a. [6]

(b) The region enclosed between the x-axis and the curve is rotated through 2π radians about the x-axis.

Find the exact volume of the solid generated. [5]

Additional page

If you use the following page to complete the answer to any question, the question number must be clearly shown.