6

Diagram **NOT** accurately drawn

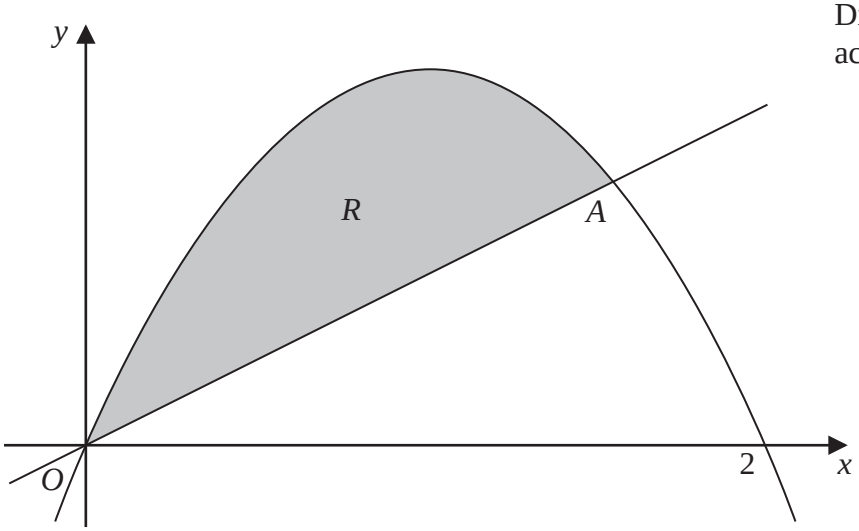

Figure 2

The region R, shown shaded in Figure 2, is bounded by the curve with equation $y = 2x - x^2$ and the line with equation $2y - x = 0$

The curve and the line intersect at the origin O and the point A.

(a) Show that the point A has coordinates $\left(\frac{3}{2}, \frac{3}{4}\right)$.

(2)

The region R is rotated through 360° about the x-axis.

(b) Use algebraic integration to find, in terms of π, the volume of the solid formed.

(6)

Question 6 continued

Question 6 continued

Question 6 continued

(Total for Question 6 is 8 marks)