PMT

5

Figure 1
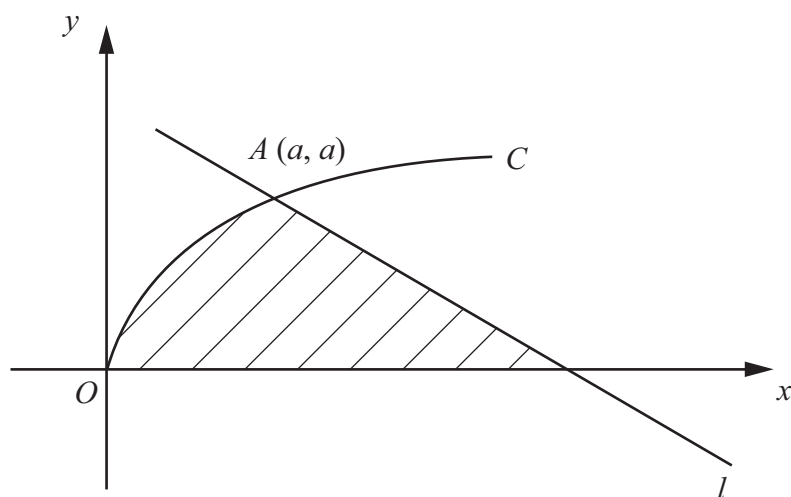
The curve C, with equation $y^2 = 5x$ and the line l intersect at the point A with coordinates (a, a), $a \neq 0$, as shown in **Figure 1**.

(a) Find the value of a.

(2)

The line l has gradient $-\dfrac{5}{7}$ and intersects the x-axis at the point B.

(b) Find the x-coordinate of B.

(3)

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

(c) Find, in terms of π, the volume of the solid generated.

(5)

P 3 8 6 4 7 A 0 1 0 2 8

Question 5 continued

(Total for Question 5 is 10 marks)