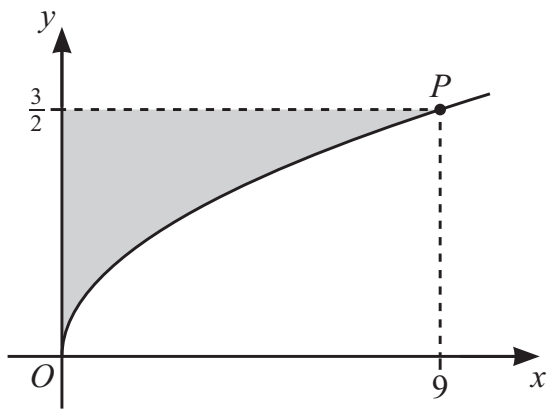
8



The diagram shows the curve with equation $y = \frac{1}{2}\sqrt{x}$ and the point P with coordinates $\left(9, \frac{3}{2}\right)$. The shaded region is bounded by the curve and the lines $x = 0$ and $y = \frac{3}{2}$.

(a) Find the area of the shaded region. [3]

(b) The shaded region is rotated through 360° about the ***y*-axis**.

Find the exact volume of the solid produced. [4]