

1996 AB2

Let R be the region in the first quadrant under the graph of $y = \frac{1}{\sqrt{x}}$ for $4 \leq x \leq 9$.

- (a) Find the area of R .
- (b) If the line $x = k$ divides the region R into two regions of equal area, what is the value of k ?
- (c) Find the volume of the solid whose base is the region R and whose cross sections cut by planes perpendicular to the x -axis are squares.