

## Volume of Cross Sections

p. 447 - 457 (6.2)

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The function  $A$  represents the area of the cross section.

Perpendicular to the  $x$ -axis:  $V = \int_a^b (A(x)) dx$

Perpendicular to the  $y$ -axis:  $V = \int_c^d (A(y)) dy$

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\*\*1. Let  $R$  be the region in the 1st quadrant under  $y = \frac{1}{\sqrt{x}}$  for

$4 \leq x \leq 9$ . Find the volume of the solid whose base is the region  $R$  and whose cross sections cut by planes  $\perp$  to the  $x$ -axis are squares.

2. Find the volume of the solid whose base is enclosed by  $x^2 + y^2 = 1$  and whose cross sections taken perpendicular to the base are semicircles.