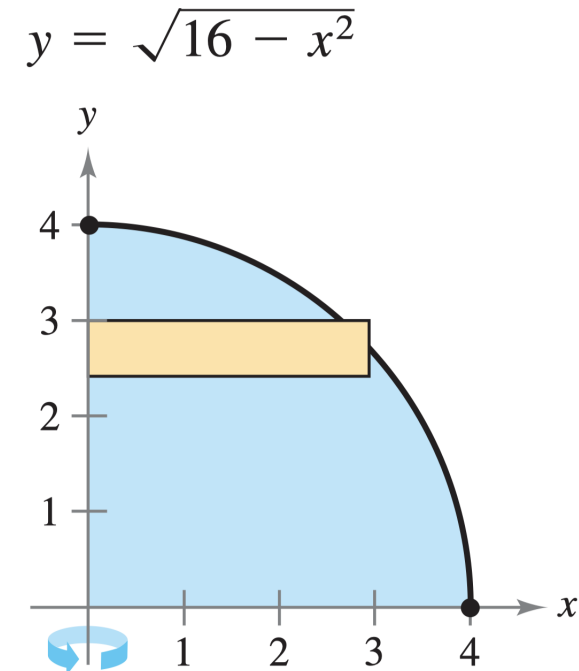


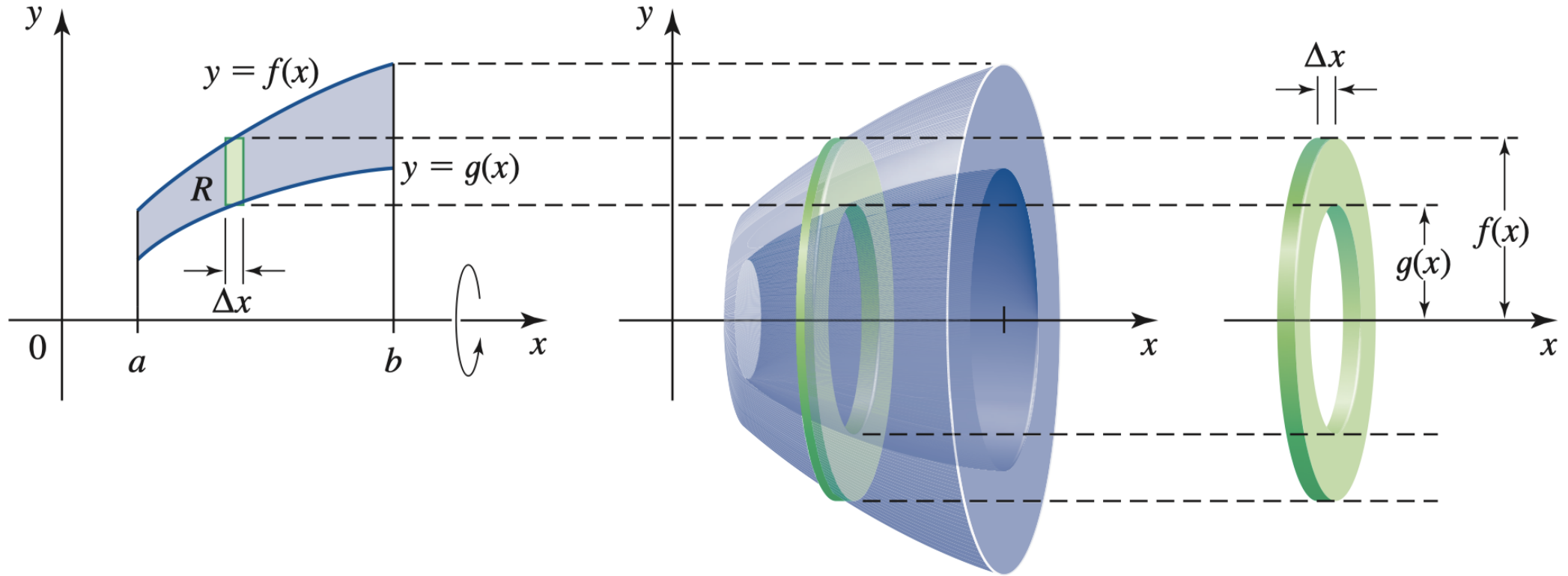
How is the washer method used to find the volume of a solid of revolution that may be hollow inside?

Quick Check

Set up the integral that gives the volume of the solid formed by revolving the region shown about the y -axis.



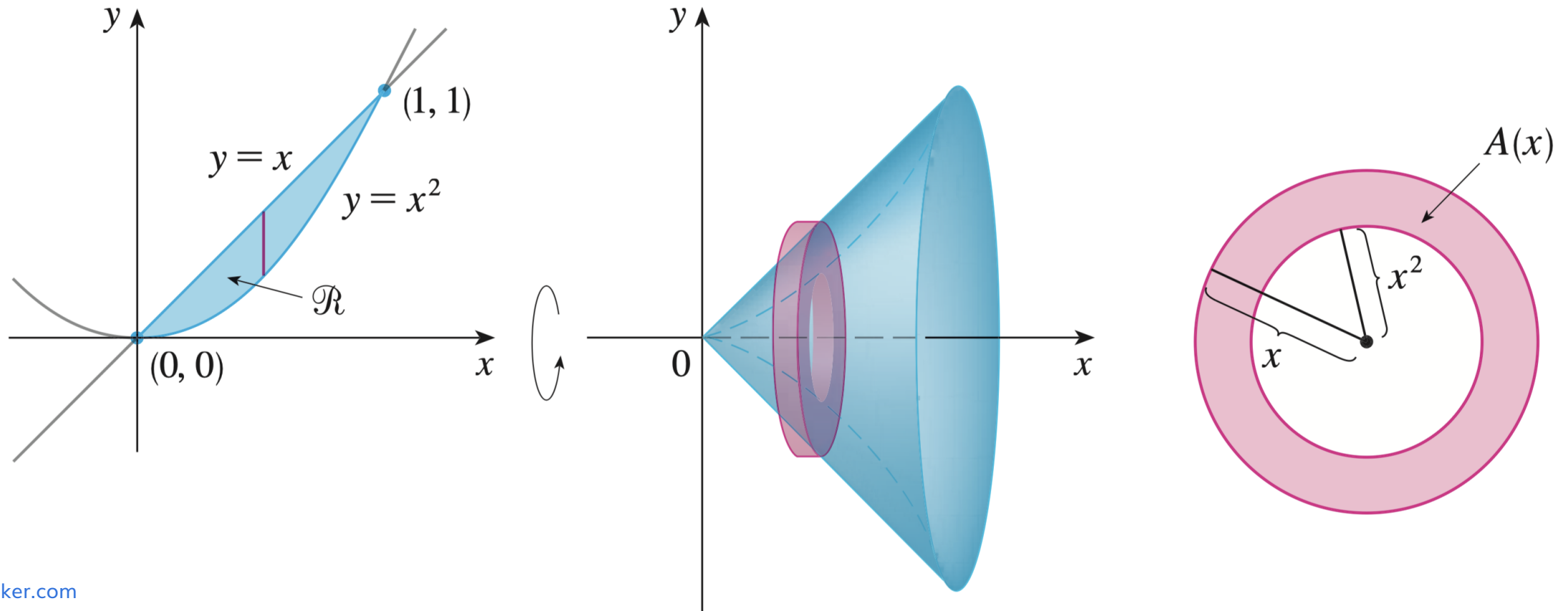
The Washer Method



$$V = \pi \int_a^b [R(x)]^2 - [r(x)]^2 dx$$

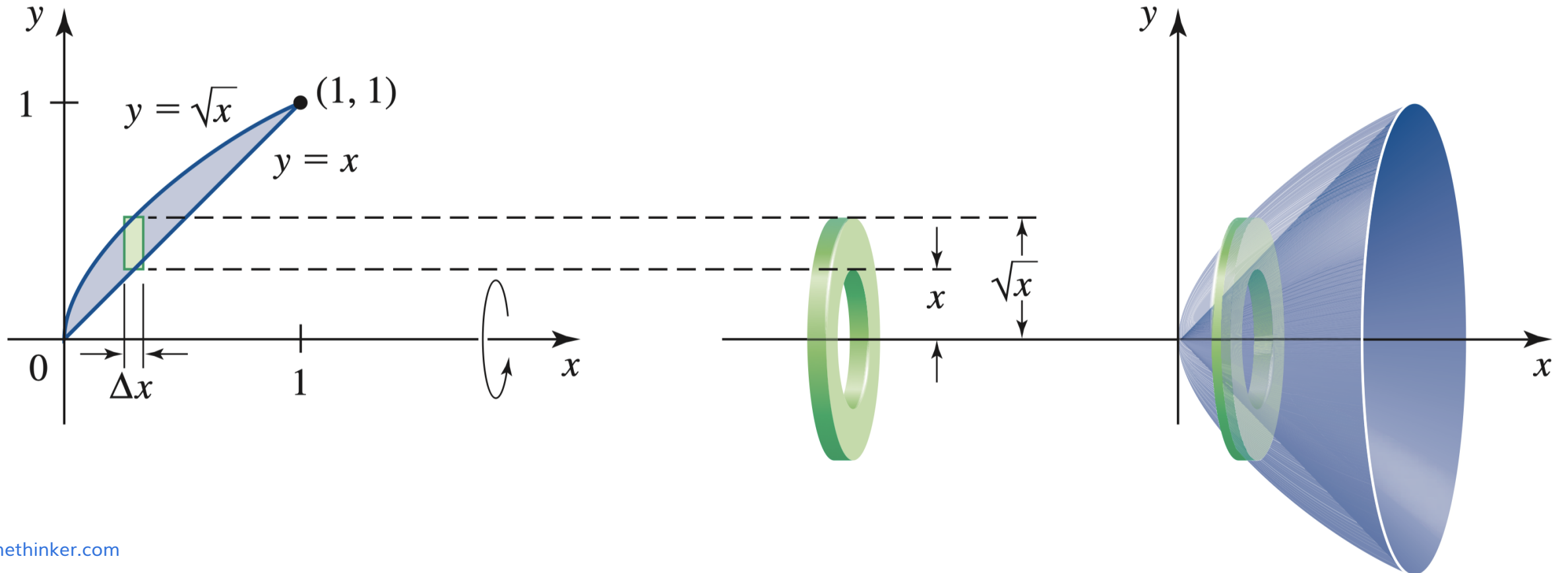
Example

The region enclosed by the curves $y = x$ and $y = x^2$ is rotated about the x -axis. Find the volume of the resulting solid.



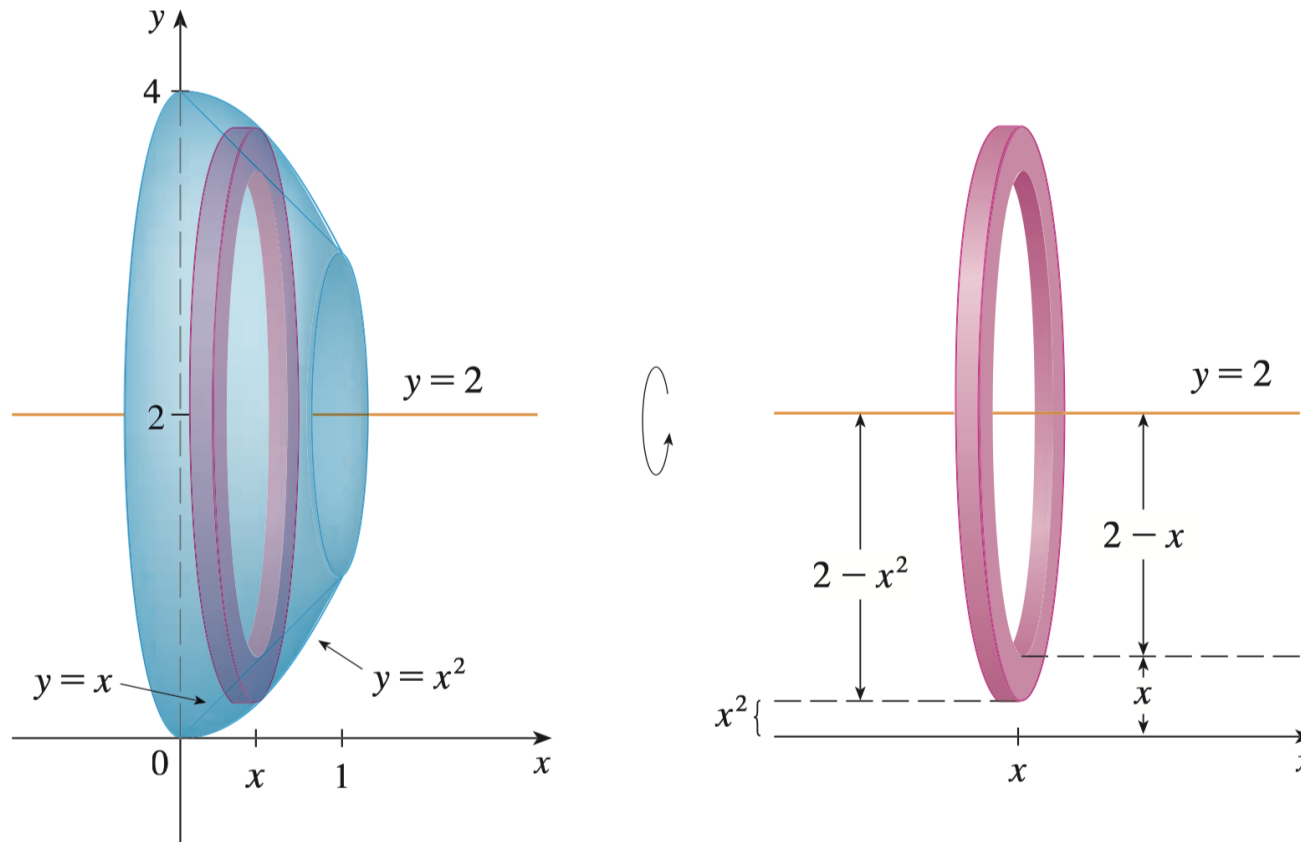
Practice

Find the volume of the solid obtained by revolving the region bounded by $y = \sqrt{x}$ and $y = x$ about the x -axis.



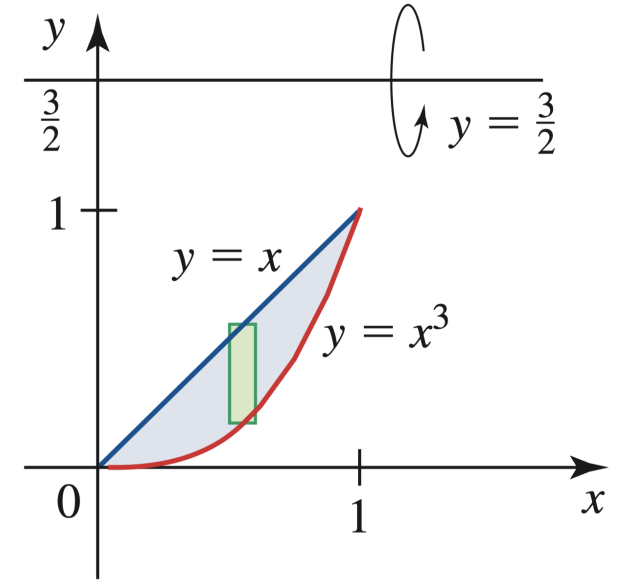
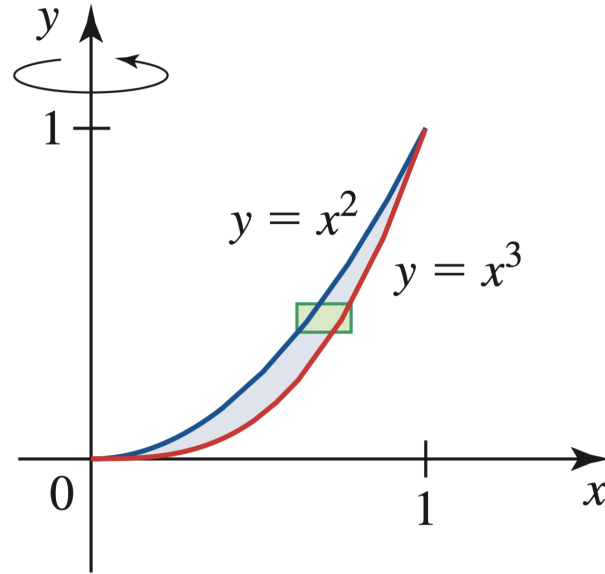
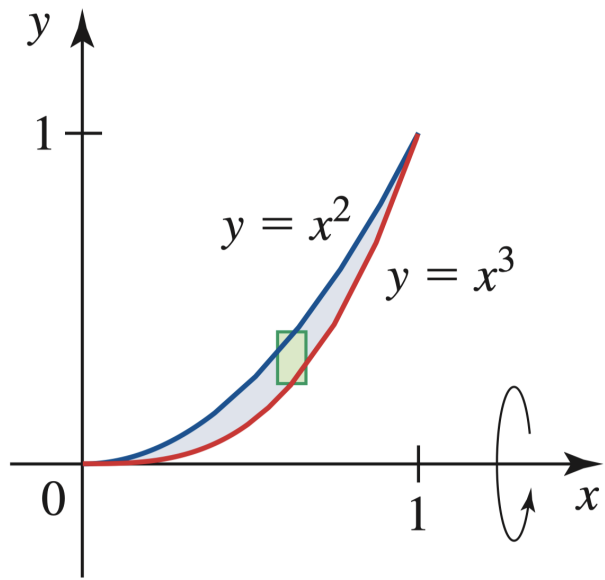
Example

The region enclosed by the curves $y = x$ and $y = x^2$ is rotated about the line $y = 2$. Find the volume of the resulting solid.



Practice

Find the volume of the solid that is obtained by revolving the region about the indicated axis or line.



Practice

Find the volume of the solid that is obtained by revolving the region about the indicated axis or line.

