

Open Book Quiz

Intermediate Calculus & Analytic Geometry (MATH 242 A) Date: September 24, 2013

Name:

1. Find the volume V of the solid obtained by rotating the region bounded by the given curves about the specified line.

$$y = 2 - \frac{1}{2}x, \quad y = 0, \quad x = 0, \quad x = 1;$$

about the x -axis.

2. Find the volume V of the solid obtained by rotating the region bounded by the given curves about the specified line.

$$x = 2\sqrt{5y}, \quad x = 0, \quad y = 3;$$

about the y -axis.

3. Find the volume V of the solid obtained by rotating the region bounded by the given curves about the specified line.

$$y = 3x^4, \quad y = 3x, \quad x \geq 0; \quad \text{about the } x\text{-axis}$$

4. Use the method of cylindrical shells to find the volume V of the solid obtained by rotating the region bounded by the given curves about the x -axis.

$$y = x^3, \quad y = 27, \quad x = 0.$$

5. Use the method of cylindrical shells to find the volume V generated by rotating the region bounded by the given curves about $x = 3$.
 $y = 3x^4$, $y = 0$, $x = 2$

6. Use the method of cylindrical shells to find the volume V generated by rotating the region bounded by the given curves about the specified axis.
 $y = 6x - x^2$, $y = 8$; about $x = 2$