

8.9 Disc Method: Revolve Around x or y Axis

Calculus

Name: _____

CA #1

For each problem, sketch the area bounded by the equations and revolve it around the x -axis. Find the volume of the solid formed by this revolution. Leave your answers in terms of π .

1. $y = -x + 4, x = 1, y = 0$

2. $y = -\sqrt{x}, x = 2, x = 3$

Same instructions as above but use a calculator and round to three decimals.

3. $y = 2 - x^2, x = 0, y = 0$

4. $y = \sqrt{16 - x^2}, x = -1, y = 0$

Same instructions as above but revolve around the y -axis now. Leave your answers in terms of π .

5. $y = \sqrt{16 - x^2}, x \geq 0$

6. $y = x^3, x = 0, y = 8$

1. $\int_4^1 \pi(-x+4)^2 dx = 9\pi$	2. $\int_3^2 \pi x dx = \frac{5}{2}\pi$	3. $\int_{\sqrt{2}}^0 \pi(2-x^2)^2 dx = 9.478$
4. $\int_4^{-1} \pi(16-x^2)^2 dx = 183.2596$	5. $\int_0^4 \pi(16-y^2)^2 dy = \frac{3}{128}\pi$	6. $\int_0^8 \pi(\sqrt{y})^2 dy = \frac{5}{96}\pi$

Answers to 8.9 CA #1