

Let R be the region enclosed by the given functions. Find the volume of the solid generated by revolving R about the given axis.

(Calculator Permitted on 1-4)

1. $y = x^3, x = 2, y = 0$ (x-axis)

2. $y = 2x, y = 0, x = 2$ (revolve about $y = -1$)

3. $y = \frac{x}{2}, x = 0, y = 2$ (revolve about $y = 3$)

4. $y = \sqrt{x}, x = 0, y = 2$ (x-axis)

(No Calculator Permitted on 5-8)

5. $y = x^2, x = -1, x = 4, y = 0$ (x-axis)

6. $y = x^4, x = 1, y = 0$ (x-axis)

7. $y = \sqrt{9-x^2}, y = 0$ (x-axis)

8. $y = x^2, y = 2x$ (revolve around the line $y = 4$)

9. **(Calculator Permitted)** Calculate the area bounded by $y = x^3 - 4x + 4$ and $y = 3x - 2$.

Answers:

1. $\frac{128\pi}{7}$ units ³	2. $\frac{56}{3}\pi$	3.	4. 8π units ³	5. 205π
6. $\frac{\pi}{9}$	7. 36π	8. $\frac{32\pi}{5}$		