

Volumes of solids of revolution about the x-axis Date _____ Period _____

For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the x-axis.

1) $y = -x^2 + 4, y = 0$

2) $y = 2\sqrt{\sin x}, y = 0, x = \frac{\pi}{6}, x = \frac{3\pi}{4}$

3) $y = 2\sec x, y = 0, x = -\frac{\pi}{3}, x = 0$

4) $y = x^2, y = 0, x = 2$

5) $y = \sqrt{x}, y = 0, x = 1$

6) $y = \sec x, y = 0, x = 0, x = \frac{\pi}{3}$

7) $y = \sqrt{x} + 4, y = x^2 + 4$

8) $y = 1, y = \sqrt[3]{x}, x = 0$

9) $y = -x^2 + 6, y = x + 4$

10) $y = 4, y = \frac{2}{x}, x = 2$

11) $y = 2\sec x, y = \sec x, x = -\frac{\pi}{3}, x = -\frac{\pi}{4}$

12) $y = 2\csc x, y = \csc x, x = \frac{\pi}{4}, x = \frac{\pi}{2}$