

AREA BETWEEN CURVES AND VOLUME

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Name: _____

AREA BETWEEN CURVES

For each problem, sketch the region enclosed by the two curves and compute its area.

1. $y = \sin(x)$, $y = x$, $x = \pi/2$, $x = \pi$

2. $y = x^2 - 4x$, $y = 2x$

3. $y = 1 - x^2, y = x^2 - 1$

4. $y = x^3, y = x$

VOLUMES

Find the volume of the solid obtained by rotating the region bounded by the given curves about the specified line. Sketch the curves and a typical cross section of the solid.

5. $y = \sqrt{x-1}$, $y = 0$, $x = 1$, $x = 4$; about the x -axis.

6. $y = x^3$, $y = x$, $0 \leq x$; about the x -axis

7. $y = x^2$, $x = y^2$; about $y = 1$