
Math 152 - Week-In-Review 2

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1. Find the area of the region bounded by the curves $y = 4/x$, $y = -1$, $x = 1$ and $x = 3$.

2. Find the area bounded by the curves $y = x^2 + 2$, $y = 2x + 5$, $x = 0$ and $x = 6$.

3. Find the volume of the solid obtained by rotating the region bounded by the curves $y = 2x - x^2$, $y = 0$, $x = 0$ and $x = 1$, about the y -axis.

4. Find the volume of the solid obtained by rotating the region bounded by the curves $y = \cos x$, $y = \sin x$, $x = 0$ and $x = \pi/4$, about the x -axis.

5. Find the volume of a solid whose base is the region bounded by the parabola $y = x^2$ and the line $y = 1$ and where the cross sections perpendicular to the y -axis are equilateral triangles.

6. Find the volume of a solid whose base is the region bounded by the parabola $y = x^2$ and the line $y = 1$ and where the cross sections perpendicular to the x -axis are semi circles.

7. Set up the integral(s) to find the volume of the solid obtained by rotating the region bounded by the curves $y = x^2 + 4$, $y = 4$, $x = 1$, and $x = 2$

(a) about the line $y = 4$ using the method of disks.

(b) about the x -axis using the method of washers.

(c) about the x -axis using the method of cylindrical shells.

(d) about the y -axis using the method of washers.

(e) about the y -axis using the method of cylindrical shells.

(f) about the line $x = 2$.

(g) about the line $x = 5$.

(h) about the line $x = -3$.



(i) about the line $y = 10$.

(j) about the line $y = -5$.

(k) about the line $y = 1$.

8. Set up the integral(s) to find the volume of the solid obtained by rotating the region bounded by the curves $y = -x^2 + 7x - 10$ and $y = x - 2$

(a) about the x -axis.

(b) about the y -axis.