AP CALCULUS AB Name _____
Supplement 6.3 Date _____
Volume by Cross-Sectional Area Period _____

1. The base of the solid is the region bounded by $y = x^2$ and $y = 2 - x^2$. Find the volume of the solid if cross sections perpendicular to the *x*-axis are (a) squares, and (b) semicircles.

2. The base of the solid is the region bounded by $y = \ln x$, $x = 2$, and $y = 0$. Find the volume of the solid if cross sections perpendicular to the *y*-axis are (a) equilateral triangles, and (b) semicircles.

3. The base of the solid is the region bounded by $y = e^{-2x}$, $y = 1$, and $x = 3$. Find the volume of the solid if cross sections perpendicular to the *y*-axis are (a) squares, and (b) isosceles right triangles with one leg on the *xy*-plane.

4. The base of the solid is the region bounded by $y = x^2$ and $y = \sqrt{x}$. Find the volume of the solid if cross sections perpendicular to the *x*-axis are (a) equilateral triangles, and (b) isosceles right triangles with one leg on the *xy*-plane.

Supplement 6.3 Answers

1a. $\frac{64}{15}$

1b. $\frac{8\pi}{15}$

2a. 0.118034

2b. 0.107045

3a. 6.498760

3b. 3.249380

4a. $\frac{9\sqrt{3}}{280}$

4b. $\frac{9}{140}$