1. Find the volume of the solid obtained by rotating the region bounded by \( y = \frac{1}{\sqrt{x+1}} \), \( y = 0 \), \( x = 0 \), \( x = 1 \), about the x-axis.

2. Find the volume of the solid \( S \) described. A right circular cone with height \( h \) and base radius \( r \).

3. Using the method of cylindrical shells find the volume of the solid obtained by rotating the region bounded by 
\[ y = 4x - 4x^2, \quad y = 8x - 2x^2, \]  
about \( x = -2 \).

4. Find the volume of the solid obtained by rotating the region bounded by \( y = x^2 \), \( y = 0 \), \( x = 1 \), \( x = 2 \), about \( x = 4 \).

5. Find the volume of the solid obtained by rotating the region bounded by \( y = x^4 \), \( y = 1 \), about \( y = 2 \).

6. Find the volume of the solid \( S \) described. The base of \( S \) is the triangular region with vertices (0,0), (2,0), and (0,1). Cross-sections perpendicular to the x-axis are semicircles.

7. Find the volume of the solid obtained by rotating the region bounded by \( y = \sec(x) \), \( y = 1 \), \( x = -1 \), \( x = 1 \), about the x-axis.

8. Find the volume of the solid obtained by rotating the region bounded by \( y = x^4 \), \( y = 1 \), about \( y = 2 \).

9. Find the volume of the solid \( S \) described. The base of \( S \) is the parabolic region \( \{(x, y)|x^2 \leq y \leq 1\} \). Cross-sections perpendicular to the y-axis are equilateral triangles.

10. Find the volume of the solid \( S \) described. The base of \( S \) is an elliptical region \( \{(x, y)|9x^2 + 4y^2 = 36\} \). Cross-sections perpendicular to the x-axis are isosceles right triangles with hypotenuse in the base.

11. Find the volume of the solid obtained by rotating the region bounded by \( y = \cos(x) \), \( y = 0 \), \( x = 0 \), \( x = \frac{\pi}{2} \), about \( y = -1 \).

12. Find the volume of the solid obtained by rotating the region bounded by \( x = 4 - y^2 \), \( x = 8 - 2y^2 \), about \( y = 5 \).

13. Find the volume of the solid \( S \) described. The base of \( S \) is a circular disk with radius \( r \). Parallel cross-sections perpendicular to the base are squares.

14. Find the volume of the solid obtained by rotating the region bounded by \( y = -x^2 + 7x - 10 \), \( y = x - 2 \), about the x-axis.

15. Find the volume of the solid obtained by rotating the region bounded by \( x - y = 1 \), \( y = (x - 4)^2 + 1 \), about \( y = 7 \).

16. Find the volume of the solid \( S \) described. A frustum of a right circular cone with height \( h \), lower base radius \( R \), and top radius \( r \).

17. Find the volume common to two circular cylinders, each with radius \( r \), if the axis of the cylinders intersect at right angles.