1. Find the volume of the solid formed by the revolving the region bounded by the graph(s) of the equation(s) about the $x$-axis.

(a) $y = 4 - x^2, y = 0$
(b) $y = x, y = 0, x = 4$
(c) $y = \sqrt{4 - x}, y = 0, x = 0$
(d) $y = 4, y = 0, x = 2, x = 5$
(e) $y = x, x = 2, x = 6$
(f) $y = 1 - x, y = 0, x = 0$

2. A soup bowl can be modeled as a solid of revolution formed by revolving the graph of

$$y = \sqrt{\frac{x}{2} + 1}, \quad 0 \leq x \leq 4$$

about the $x$-axis. Find the volume of the soup bowl.

3. The upper half of an ellipse given by $y = \frac{\sqrt{144 - 9x^2}}{16}$ is revolved around the $x$-axis to form a prolate spheroid (shaped like a rugby ball). Find the volume of the spheroid.