1. (2 pts) Problem # 2, page 285

2. (2 pts) Sketch the region $R$ bounded by the graphs of the given equation, and show a typical horizontal slice. Then find the volume of the solid generated by revolving $R$ about the $y$-axis.

$$x = y^{2/3}, y = 27, x = 0$$

3. (2 pts) Find the volume of the solid generated by revolving about the line $y = 2$ the region in the first quadrant bounded by the parabola $3x^2 - 16y + 48 = 0$ and $x^2 - 16y + 80 = 0$ and the $y$–axis.
4. (2 pts) The base of a solid is the region inside the circle \( x^2 + y^2 = 4 \). Find the volume of the solid if every cross section by a plane perpendicular to the \( x \)-axis is a square.

5. (2 pts) The base of a solid is the region \( R \) bounded by \( y = \sqrt{x} \) and \( y = x^2 \). Each cross section perpendicular to the \( x \)-axis is a semi-circle with diameter extending across \( R \). Find the volume of the solid.