35. The region in the first quadrant bounded by the graph of $y = \sec x$, $x = \dfrac{\pi}{4}$, and the axes is rotated about the x-axis. What is the volume of the solid generated?

(A) $\dfrac{\pi^2}{4}$ (B) $\pi - 1$ (C) π (D) 2π (E) $\dfrac{8\pi}{3}$

39. The base of a solid is the region enclosed by the graph of $y = e^{-x}$, the coordinate axes, and the line $x = 3$. If all plane cross sections perpendicular to the x-axis are squares, then its volume is

(A) $\dfrac{\left(1 - e^{-6}\right)}{2}$ (B) $\dfrac{1}{2}e^{-6}$ (C) e^{-6} (D) e^{-3} (E) $1 - e^{-3}$

43. The volume of the solid obtained by revolving the region enclosed by the ellipse $x^2 + 9y^2 = 9$ about the x-axis is

(A) 2π (B) 4π (C) 6π (D) 9π (E) 12π

45. The region enclosed by the graph of $y = x^2$, the line $x = 2$, and the x-axis is revolved about the y-axis. The volume of the solid generated is

(A) 8π (B) $\dfrac{32}{5}\pi$ (C) $\dfrac{16}{3}\pi$ (D) 4π (E) $\dfrac{8}{3}\pi$