1. (10 pts) The region enclosed by the given curves is rotated about the specified axis. Find the volume of the resulting solid using cross-sections.

(a) $y = \sqrt{x}$, $y = x$; about the x-axis

(b) $y = x^2$, $y = 0$, $x = 1$; about $x = 1$

2. (10 pts) Use the method of cylindrical shells to find the volume generated by rotating the region bounded by the given curves about the specified axis.

(a) $y = e^{-x^2}$, $y = 0$, $x = 0$, $x = 1$; about the y-axis

(b) $x = 2y^2$, $x = y^2 + 1$; about $y = -1$