1. Sketch the region enclosed by the graphs of the given equations. Then, use a definite integral to find the exact value of the volume of revolution obtained by rotating the region about the given axis of revolution.

(a) \( y = x^2 \), \( y = 9x \), about the \( x \)-axis

(b) \( y = x^2 \), \( y = 9x \), about \( y = -1 \)

(c) \( y = 4x \), \( y = 4x^2 - x^3 \) about the \( y = -1 \)
(d) $y = \frac{1}{\sqrt{x}}$, $y = 0$, $x = 2$, $x = 6$ about the $x$-axis

(e) $y = e^x$, $y = 0$, $x = 1$, $x = 2$ about $y = -2$

(f) $y = \ln x$, $y = 0$, $x = 2$, about $x = -1$