

1. Compute the volume of the solid generated when the area bounded by

$$x = 0, \quad y = 0, \quad y = 1, \quad \text{and} \quad y = x^3$$

is rotated about the x -axis.

2. Evaluate the following integrals.

(a) $\int (e^x + e^{-x}) \, dx$

(b) $\int \frac{\cos x}{2 - \sin x} \, dx$

3. Compute the exact area of the region bounded by the curves $y = (x - 4)^2$ and $y = 4x - x^2$.