Volume Worksheet

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1 Exercises

For each plane region and axis of rotation, determine the volume of the solid of revolution using the slicing or shell method.

I. The region bounded by $y = e^x$, $x = 0$, $x = 2$, and $y = 0$, revolved about the axis $x = 0$.

II. The region bounded by $y = \sqrt{x}$, $x = 1$, $x = 4$, and $y = 0$, revolved about the axis $y = 3$.

III. The region bounded by $y = x^2$, $x = 2$, and $y = 0$, revolved about the axis $x = 0$.

IV. The region bounded by $y = \sqrt{x + 2}$, $y = x$, and $y = 0$, revolved about the axis $y = -1$.