



Find the volume of the solid obtained by rotating region R (depicted) around the line $L: x = -2$.

Solution: Because the bottom curve is $\cos x$, it will be more feasible to use the SHELL METHOD.

The "conceptual formula" for SHELL METHOD is

$$\text{volume} = \int 2\pi(\text{radius})(\text{height}) dx.$$

Our curves are functions of x , so we integrate w.r.t. x .

$$\text{volume} = \int_0^{\frac{3\pi}{2}} 2\pi(x+2)(2-\cos x) dx$$

\uparrow distance from x to L \uparrow height of cylinder at x .

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= **JUST DO IT.**