



$$y = \cos x$$

Vol as $0 \leq x \leq 2\pi$

$$r = \cos x$$

$$A_0 = \pi \cos^2 x$$

$$V = \int A dx = \pi \int_0^{2\pi} \cos^2 x dx$$

$$\cos^2 u = \frac{1}{2} + \frac{\cos 2u}{2} = \pi \int \frac{1}{2} dx + \frac{\pi}{2} \int \cos 2x dx$$