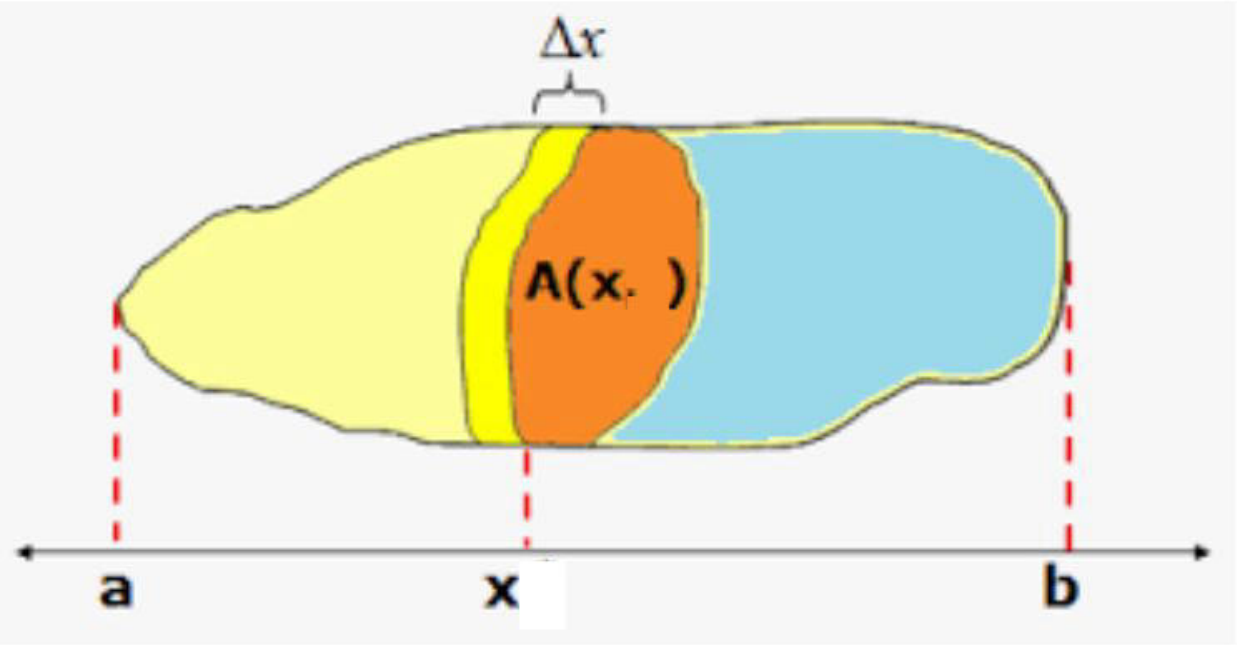
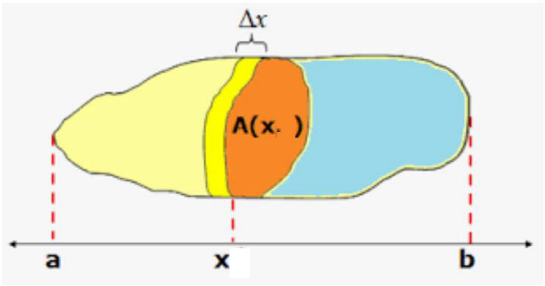
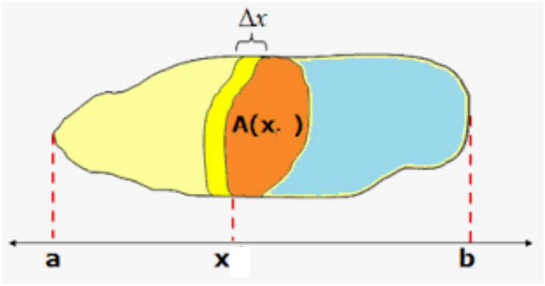

Δx
A(x.)
a
x
b

Volume of one section $= A(x)\,\Delta x$

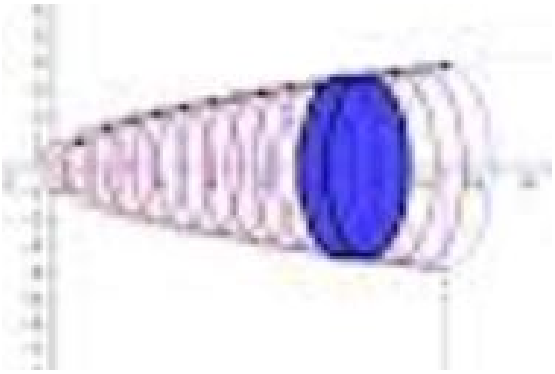


$$\text{Volume of all sections} = \int_a^b A(x)\,dx$$

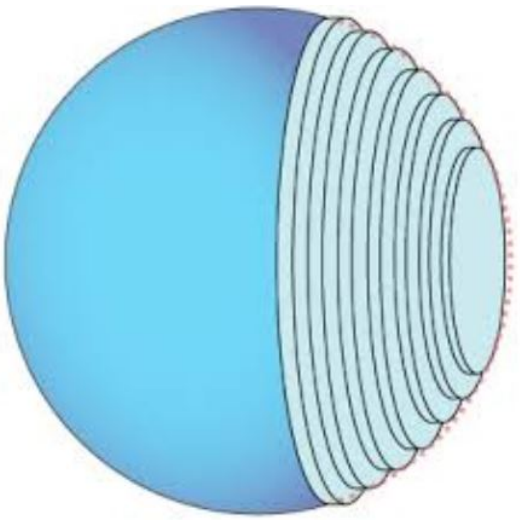


For a solid of revolution, the cross-section is a circle. One section of volume is a disk. $A(x) = \pi r^2$

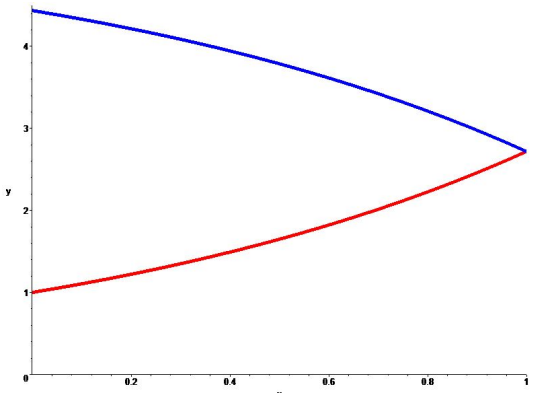
$$V = \int_a^b \pi(f(x))^2 \, dx$$



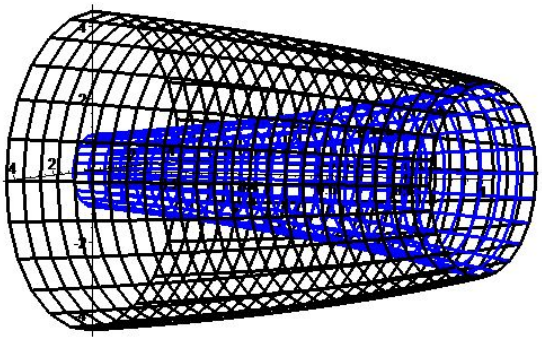
We can use the Disk Method to find the volume of a sphere.



Let $\mathcal{R}$ be the region between $f(x) = 2e - e^x$ and $g(x) = e^x$ for $0 \leq x \leq 1$



Revolve $\mathcal{R}$ around the x-axis. Find the volume.



In general, if the region $\mathcal{R}$ between two curves is revolved around the x-axis, any rectangular strip in $\mathcal{R}$ will generate an inner disk and an outer disk. The region in between is called a *washer*.