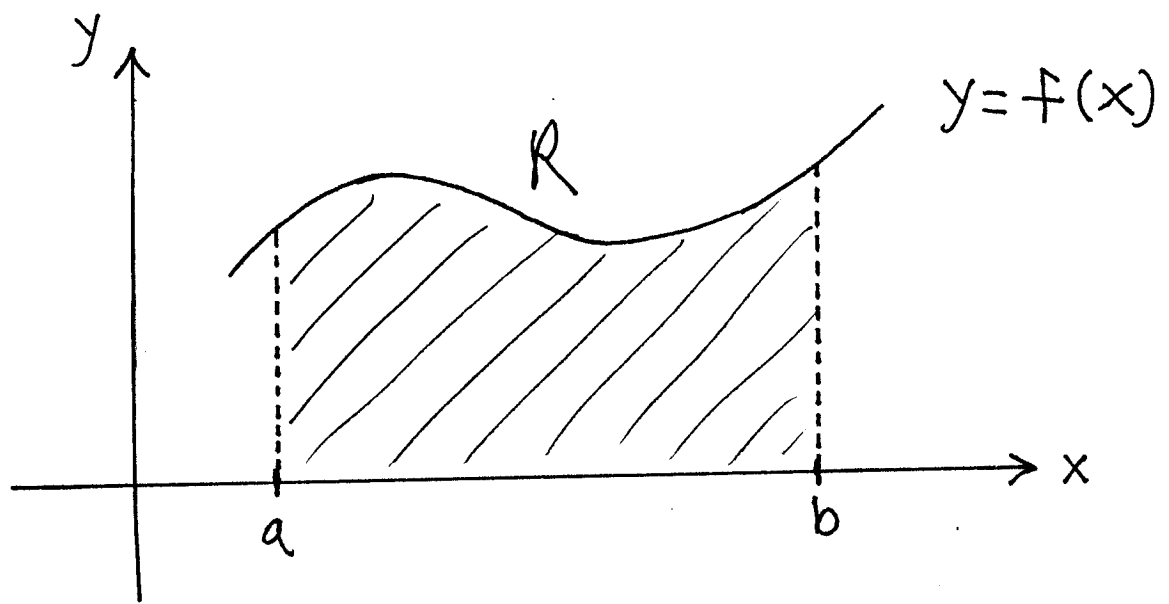
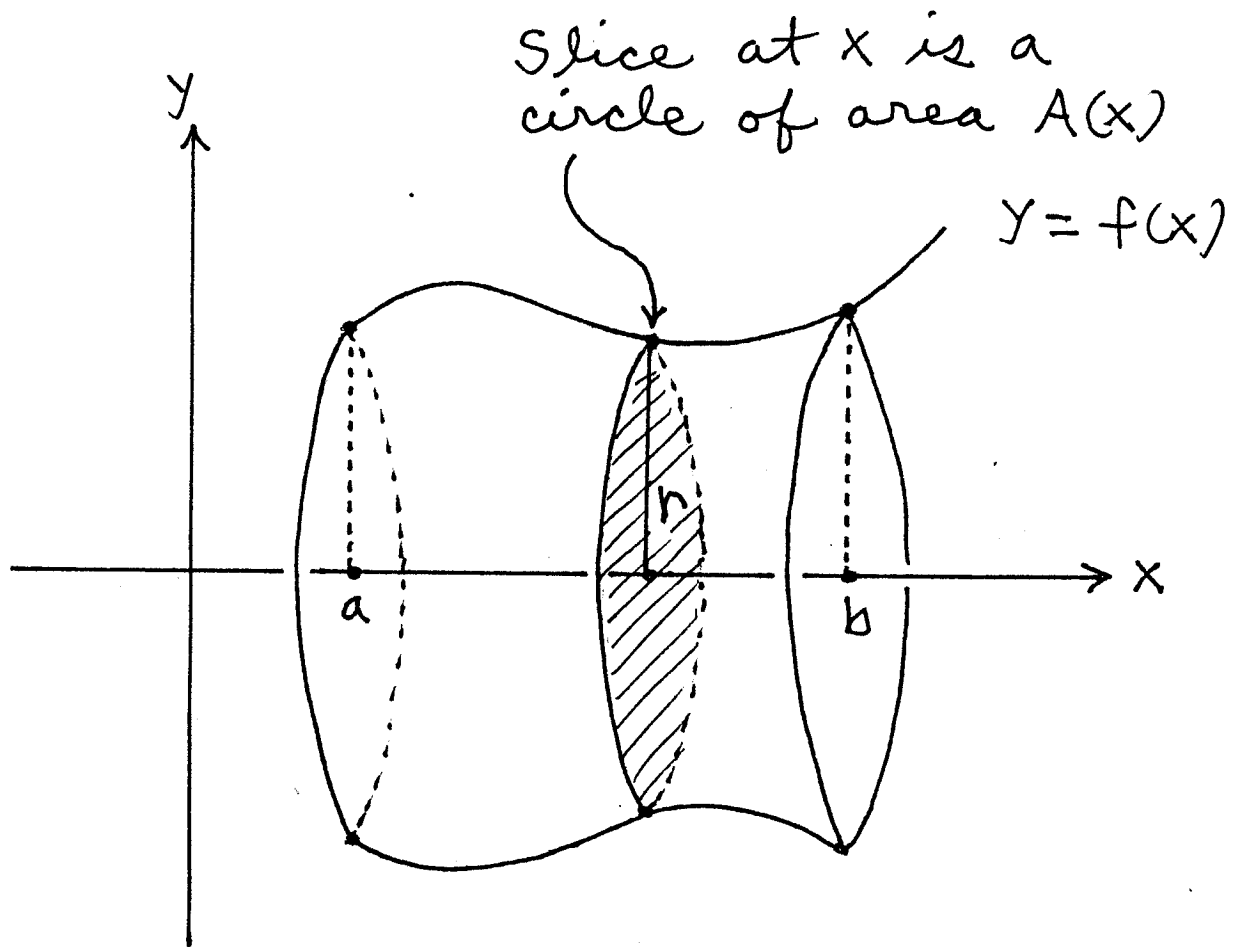


Disc Method - Finding Volume of Solid of Revolution

Consider region R between the x -axis and the graph of $y = f(x)$ on the interval $[a, b]$.



Create a solid of revolution by revolving region R about the x -axis.



Area $A(x) = \pi r^2 = \pi (f(x))^2$, so total volume of solid of revolution is

$$\begin{aligned} \text{Volume} &= \int_a^b A(x) dx \\ &= \int_a^b \pi (f(x))^2 dx \\ &\quad \uparrow \text{radius} \end{aligned}$$