

6.6: Surface Area

Definition. (Area of a Surface of Revolution)

Let f be a nonnegative function with a continuous first derivative on the interval $[a, b]$. The area of the surface generated when the graph of f on the interval $[a, b]$ is revolved around the x -axis is

$$S = \int_a^b 2\pi f(x) \sqrt{1 + f'(x)^2} dx.$$