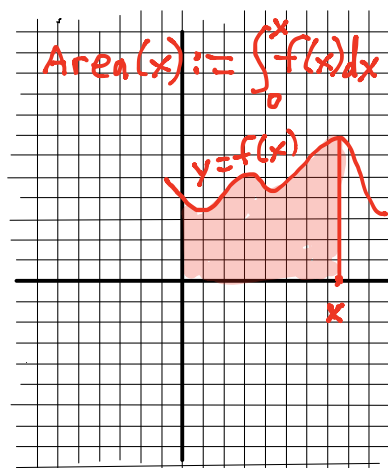


The integral $\int_0^x f(x)dx$ is **by definition** the area of the region between the vertical lines indicated and the graph of the function $f(x)$:



The fundamental theorem of calculus asserts that the derivative of this area function is the original function $f(x)$:

