

$$\int_a^b f(x) \, dx = \lim_{\Delta x \rightarrow 0} \sum_{k=1}^n \min(f(x_k), f(x_k + \Delta x)) \Delta x$$

$$= \lim_{\Delta x \rightarrow 0} \sum_{k=1}^n \min(f(x_k), f(x_k + \Delta x)) \Delta x$$

