



$$\lim_{n \rightarrow \infty} \sum_{k=0}^{n-1} \frac{b-a}{n} f\left(a + k \cdot \frac{b-a}{n}\right) = \int_a^b f(x) dx$$

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \frac{b-a}{n} f\left(a + k \cdot \frac{b-a}{n}\right) = \int_a^b f(x) dx$$

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n \frac{1}{n} f\left(\frac{k}{n}\right) = \int_0^1 f(x) dx$$

