

Definite Integral as the Limit of a Riemann Sum

$$\int_0^4 x^3 dx$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \left(2 + \frac{2i}{n}\right)^3 \cdot \left(\frac{2}{n}\right)$$

$$\int_2^6 x^3 dx$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \left(4 + \frac{2i}{n}\right)^3 \cdot \left(\frac{2}{n}\right)$$

$$\int_2^6 (x + 2)^3 dx$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \left[\sin\left(\frac{\pi i}{n}\right) \right] \cdot \left(\frac{\pi}{n}\right)$$

$$\int_{\pi/2}^{\pi} \sin x \, dx$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \left[\sin \left(\frac{\pi}{2} + \frac{\pi i}{n} \right) \right] \cdot \left(\frac{\pi}{n} \right)$$

$$\int_{\pi/4}^{3\pi/4} \sin x \, dx$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \sqrt{5 + \frac{12i}{n} \cdot \frac{3}{n}}$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \sqrt{1 + \frac{4i}{n} \cdot \left(\frac{4}{n} \right)}$$

$$\int_2^5 \sqrt{1 + 4x} \, dx$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \sqrt{1 + \frac{3i}{n}} \cdot \left(\frac{3}{n}\right)$$

$$\int_1^e \ln x \, dx$$

$$\lim_{n \rightarrow \infty} \sum_{i=1}^n \left[\ln \left(1 + \frac{e \cdot i}{n} \right) \right] \cdot \left(\frac{e}{n}\right)$$

$$\int_e^{2e} \ln x \, dx$$