

$$y = x^2$$

$$\int_1^5 x^2 dx$$

$$\Delta x_i = \frac{4}{n}$$

$$i\text{-th: } \left[1 + \frac{4}{n}(i-1), 1 + \frac{4}{n}i \right]$$

Let $\xi_i =$

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

$$= \lim_{n \rightarrow \infty} \frac{4}{n} \sum_{i=1}^n \left(1 + \frac{8i}{n} + \frac{16i^2}{n^2} \right)$$