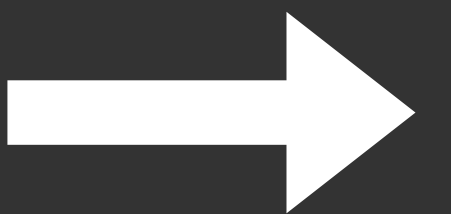
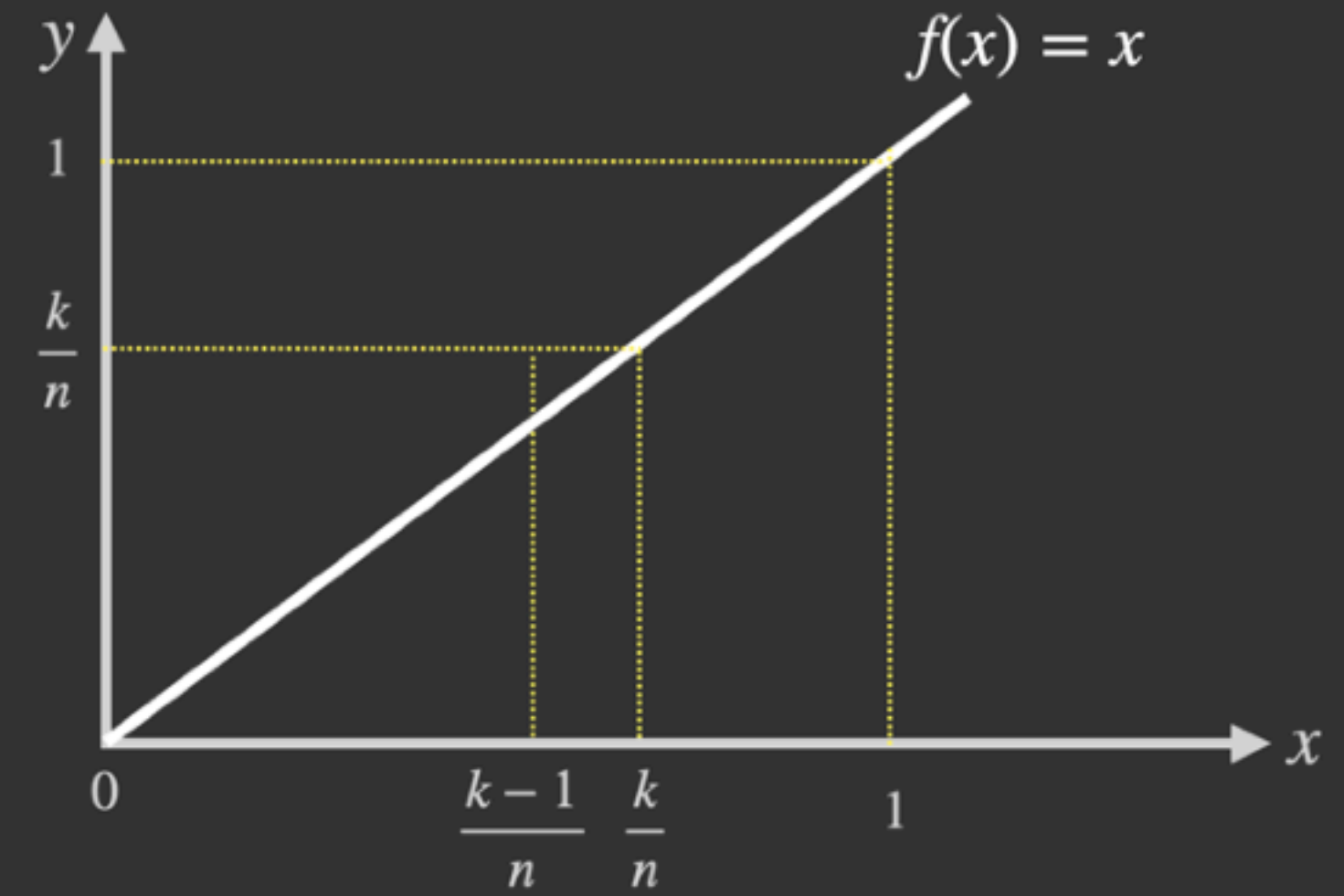


Rienmans

Riemann sum

- The sum of the area of all rectangles on the interval is

$$\begin{aligned}\frac{1}{n^2} + \frac{2}{n^2} + \cdots + \frac{k}{n^2} + \cdots + \frac{n}{n^2} &= \frac{1}{n^2}(1 + 2 + \cdots + k + \cdots + n) \\ &= \frac{1}{n^2} \frac{n(n+1)}{2} \\ &= \frac{1}{2} \left(\frac{n+1}{n} \right) \\ &= \frac{1}{2} \left(1 + \frac{1}{n} \right)\end{aligned}$$



Riemann sum

