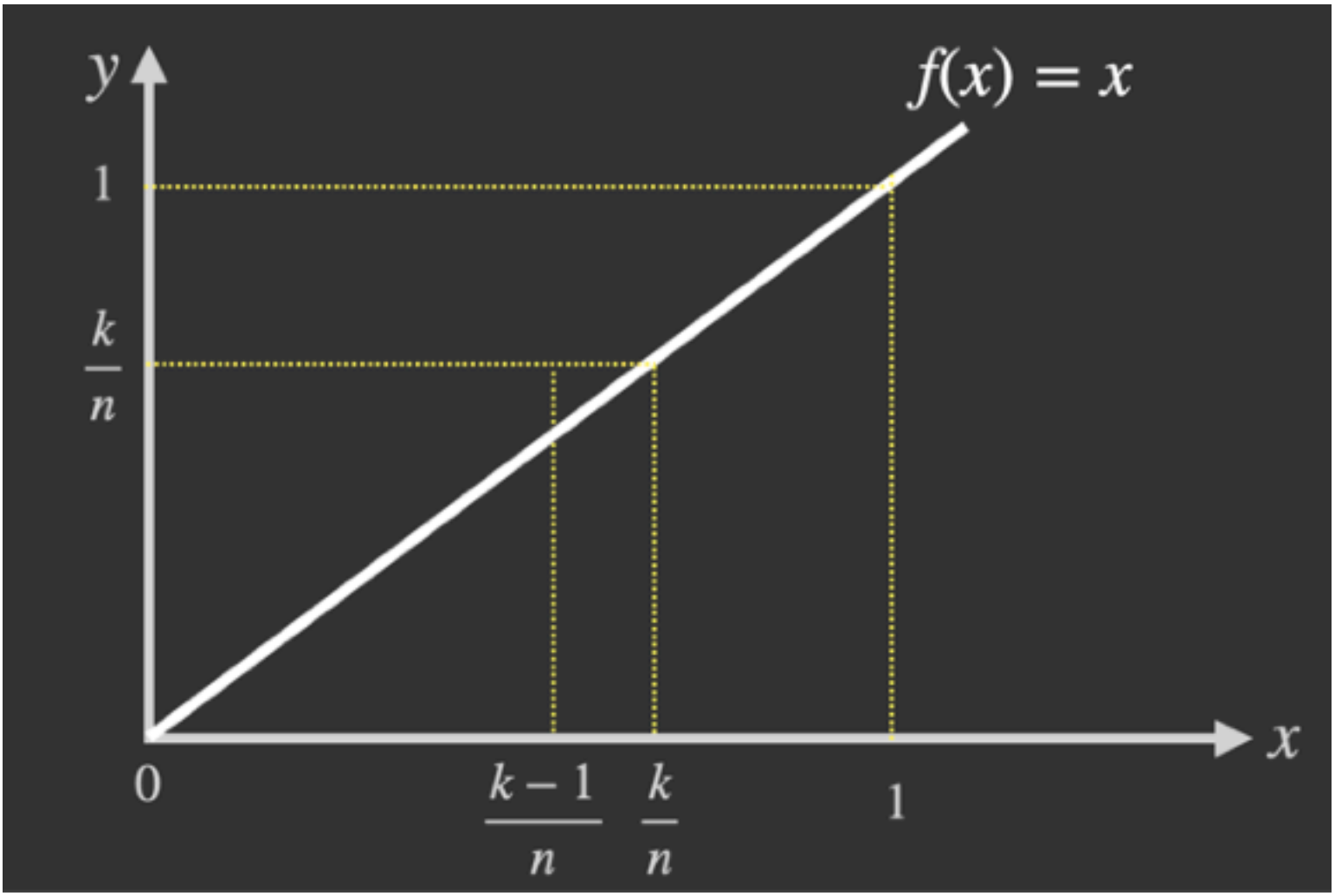
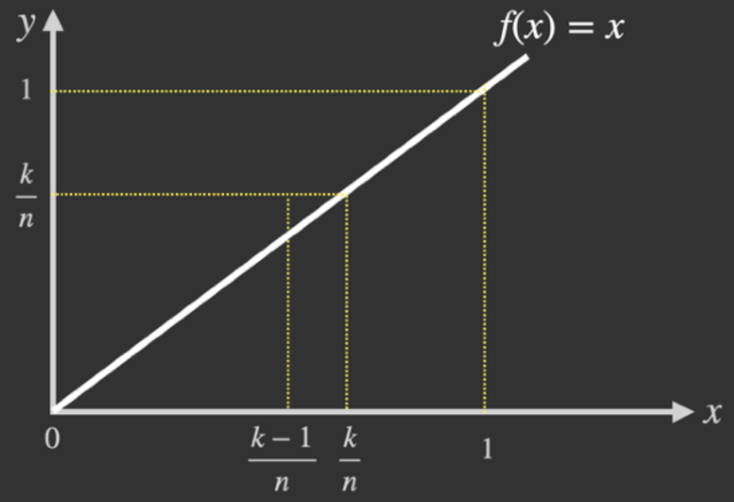

y
f(x) = x
1
k/n
0
(k − 1)/n
k/n
1
x

Riemann sum

Riemann sum



- what happens to this expression when $n \to \infty$?

$$\frac{1}{2}\left(1+\frac{1}{n}\right) \to \frac{1}{2} \text{ as } n \to \infty$$

- so as we get finer division of rectangles, the sum is approaching the exact area which is $\frac{1}{2}$

Riemann sum