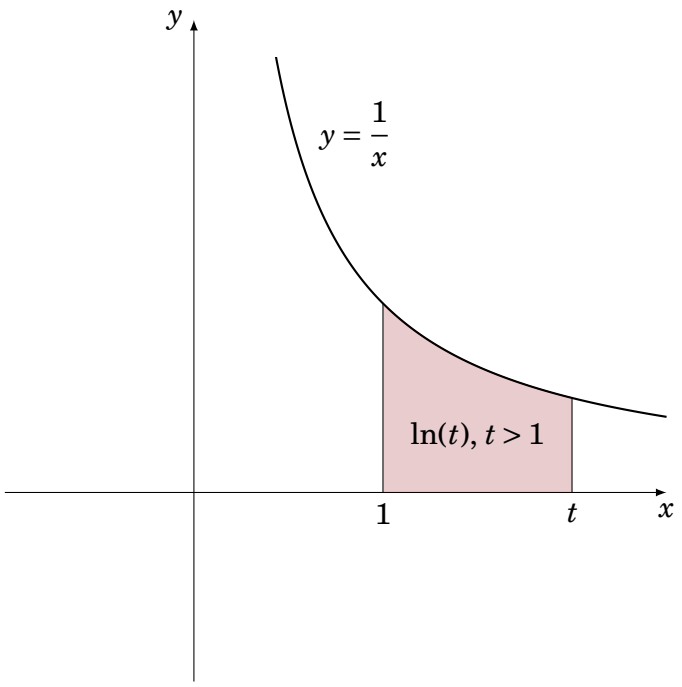
Por falar em $\lim\left(1+\frac{1}{n}\right)^n = e$

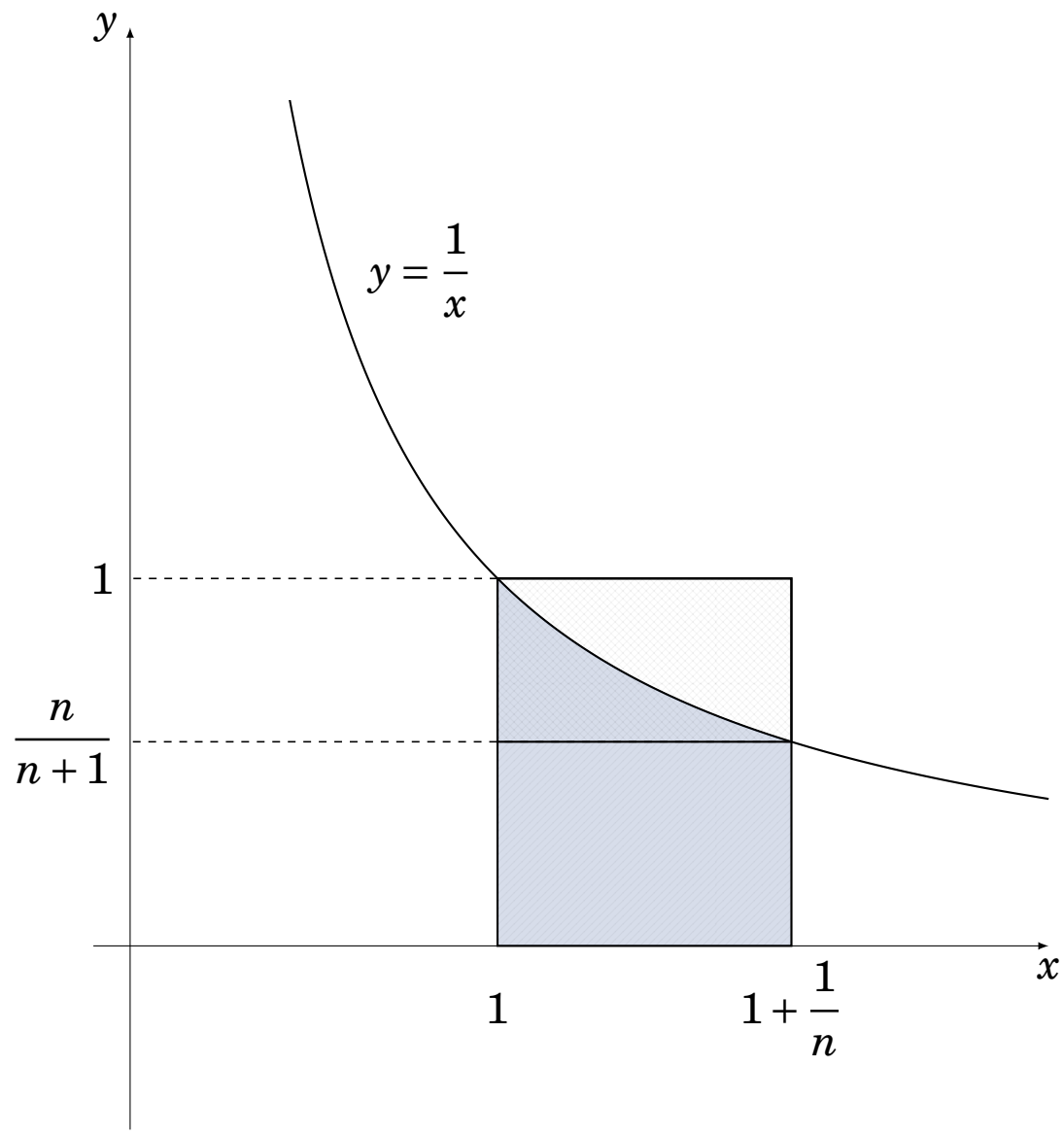


$$\frac{1}{n}\cdot\frac{n}{n+1} \leq \ln\left(1+\frac{1}{n}\right) \leq \frac{1}{n}\cdot 1$$

$$\frac{n}{n+1} \leq n\cdot\ln\left(1+\frac{1}{n}\right) \leq 1$$

$$\frac{n}{n+1} \leq \ln\left(1+\frac{1}{n}\right)^n \leq 1$$

$$\therefore \lim\left[\ln\left(1+\frac{1}{n}\right)^n\right] = 1$$



Fonte: Proofs without words II - Roger B. Nelsen