$$I := \int_a^b f(x)\,dx$$

Indukcja

- Baza ($m=0$):

$$\lim_{k\to\infty} T_{0,k} = \lim_{k\to\infty} T_{2^k} = I$$

(zad 1 ↓) ✓

- Krok ($\lim_{k\to\infty} T_{m,k} = S \Rightarrow \lim_{k\to\infty} T_{m+1,k} = S$):

$$\lim_{k\to\infty} T_{m+1,k} = \lim_{k\to\infty} \frac{4^{m+1}\cdot T_{m,k+1} - T_{m,k}}{4^{m+1}-1}$$

$$= \frac{4^{m+1}\cdot \lim_{k\to\infty} T_{m,k+1} - \lim_{k\to\infty} T_{m,k}}{4^{m+1}-1}$$

$$= \frac{4^{m+1} I - I}{4^{m+1}-1} = \frac{(4^{m+1}-1)I}{4^{m+1}-1} = I \quad ✓$$