

$$a_n := \int_0^1 \cos\left(\frac{n \pi x}{2}\right) dx$$

$$a_n := \frac{2 \sin\left(\frac{n \pi}{2}\right)}{n \pi}$$

Parillisilla n :n arvoilla saadaan 0 ja parittomilla + tai - $\frac{2}{n \pi}$

> seq(an, n=1..7);

$$\frac{2}{\pi}, 0, -\frac{2}{3 \pi}, 0, \frac{2}{5 \pi}, 0, -\frac{2}{7 \pi}$$

> sarja:=a0+Sum(an*cos(n*Pi*x/2), n=1..infinity);

$$sarja := \frac{1}{2} + \left(\sum_{n=1}^{\infty} \left(\frac{2 \sin\left(\frac{n \pi}{2}\right) \cos\left(\frac{n \pi x}{2}\right)}{n \pi} \right) \right)$$

> osasumma:=(x,N)->a0+add(an*cos(n*Pi*x/2), n=1..N):

> osasumma(x,5);

$$\frac{1}{2} + \frac{2 \cos\left(\frac{\pi x}{2}\right)}{\pi} - \frac{2}{3} \frac{\cos\left(\frac{3 \pi x}{2}\right)}{\pi} + \frac{2}{5} \frac{\cos\left(\frac{5 \pi x}{2}\right)}{\pi}$$

> plot([Jfe(x), osasumma(x,5)], x=-4..4);