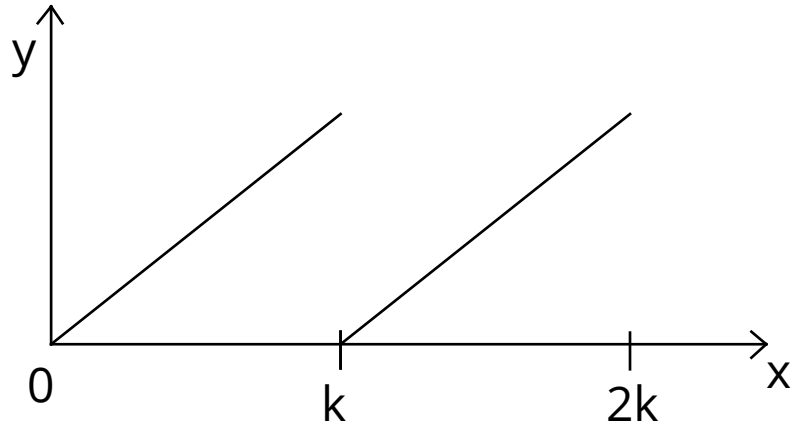
Ряд Фурье

$f(x) = f(x+k)$ – периодическая функция

$$T = k = 2l$$



$$f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty} \left(a_n \cos\frac{\pi n x}{l} + b_n \sin\frac{\pi n x}{l} \right)$$

$$a_0 = \frac{1}{l} \int_{-l}^{l} f(x)\,dx$$

$$a_n = \frac{1}{l} \int_{-l}^{l} f(x) \cos\frac{\pi n x}{l}\,dx$$

$$b_n = \frac{1}{l} \int_{-l}^{l} f(x) \sin\frac{\pi n x}{l}\,dx$$