Fourier-Entwicklung

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Funktion $f : \mathbb{R} \to \mathbb{R}$

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Funktion $f : \mathbb{R} \to \mathbb{R}$, 2π-periodisch

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Funktion $f : \mathbb{R} \to \mathbb{R}$, 2π-periodisch, $f(x + 2\pi) = f(x)$

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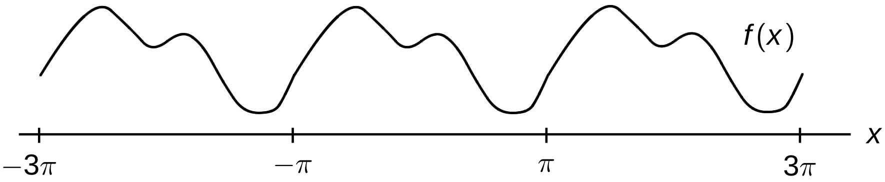

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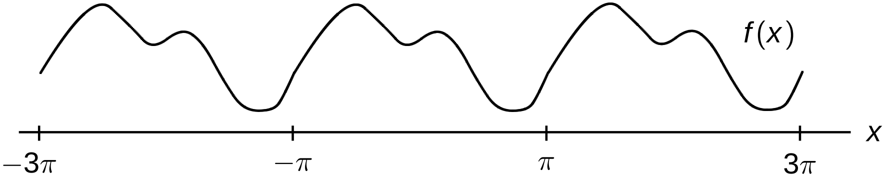

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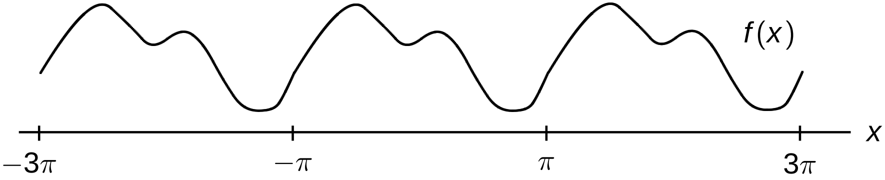

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$$\frac{a_0}{2} + \sum_{k=1}^{\infty} (a_k \cos(kx) + b_k \sin(kx))$$

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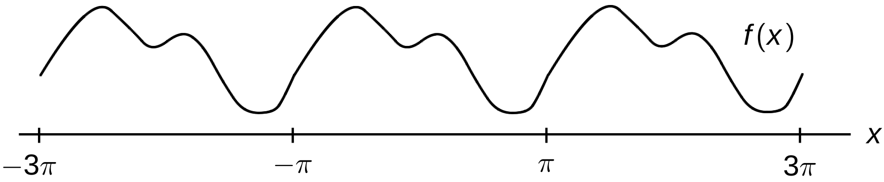

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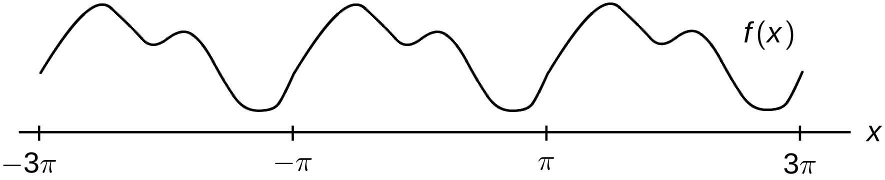

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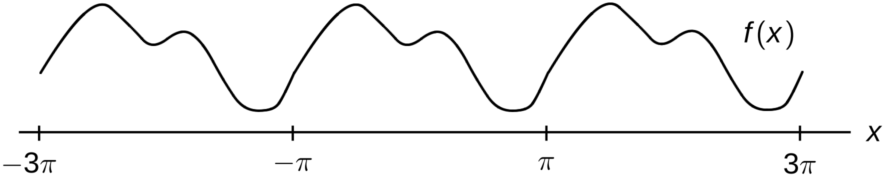

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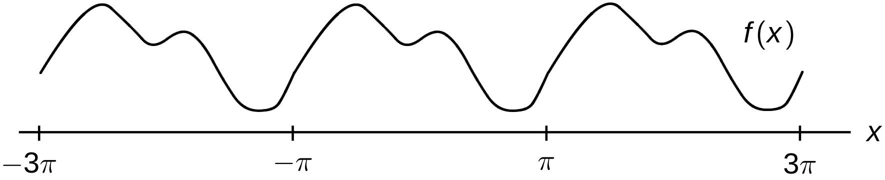

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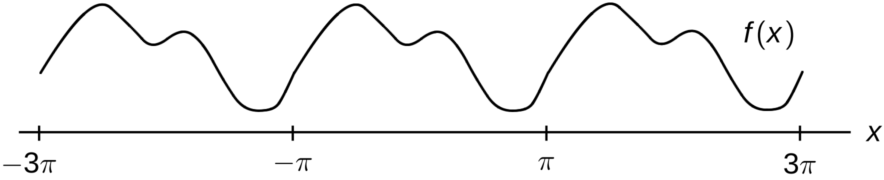

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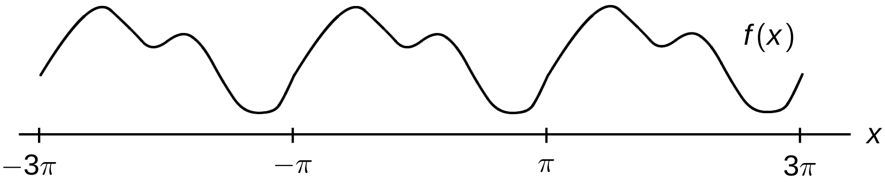

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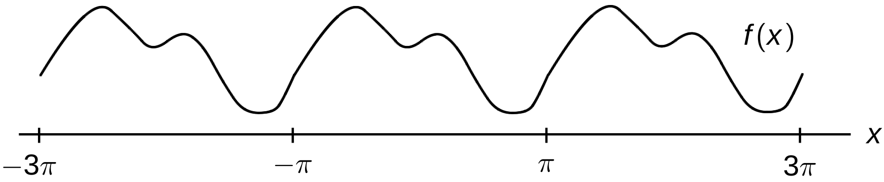

Fourier-Reihe (andere Schreibweise)

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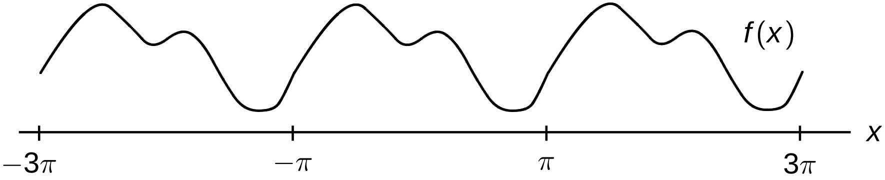

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$$f(x) = \sum_{k=-\infty}^{\infty} c_k e^{ikx}$$

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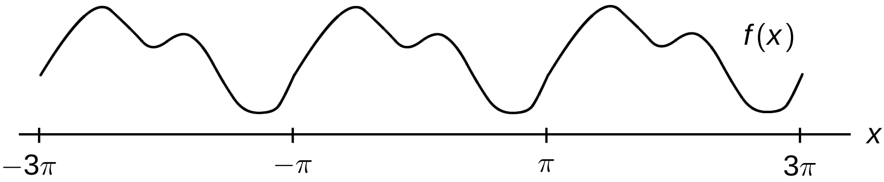

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Fourier-Koeffizienten

$$c_k := \frac{1}{2\pi} \int_{-\pi}^{\pi} f(t) e^{-ikt} \, dt$$