

Part I Problems

Problem 1: Find the Fourier series of the function $f(t)$ of period 2π which is given over the interval $-\pi < t \leq \pi$ by

$$f(t) = \begin{cases} 0, & -\pi < t \leq 0 \\ 1, & 0 < t \leq \pi \end{cases}$$

as in the same problem in the previous session – but this time use the known Fourier series for $sq(t)$ = the standard square wave.

Problem 2: Find the Fourier series of the function $f(t)$ with period 2π given by $f(t) = |t|$ on $(-\pi, \pi)$ by integrating the Fourier series of the derivative $f'(t)$.

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