

Part I Problems

Problem 1: Find the smallest period for each of the following:

a) $\sin \pi t/3$

b) $|\sin t|$

c) $\cos^2 3t$

Problem 2:

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

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

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18.03SC Differential Equations
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