

1 Solve problems 490(2,8,11,15,20,25) from the reference book.

2 Find the frequency and amplitude spectrum of the given functions.

$$f(x) = \begin{cases} \pi & \langle -\pi < x < 0 \rangle \\ \pi - x & \langle 0 \leq x \leq \pi \rangle \end{cases}$$

$$f(x) = x^2 \quad \langle -\pi/4 < x < \pi/4 \rangle$$

3 Write the complex Fourier series, determine the sum of the series, and plot some points of the frequency spectrum for the given functions.

$$f(x) = 2x \quad \langle -\pi < x < \pi, \text{ period } 3 \rangle$$

$$f(x) = x^2 \quad \langle -\pi < x < \pi, \text{ period } 2 \rangle$$

4 In each of the given problems, graph the function, the fifth partial sum of the Fourier series on the interval, and the fifth Cesàro sum, using the same set of axes.

$$f(t) = \begin{cases} 1 & \langle 0 \leq x < 2 \rangle \\ -1 & \langle -2 \leq x < 0 \rangle \end{cases}$$

$$f(t) = \begin{cases} 0 & \langle -3 \leq x < 0 \rangle \\ \cos x & \langle 0 \leq x < 3 \rangle \end{cases}$$