Problem 22

Problems 17 through 22 deal with the effect of a sequence of impulses on an undamped oscillator. Suppose that
\[ y'' + y = f(t), \quad y(0) = 0, \quad y'(0) = 0. \]

For each of the following choices for \( f(t) \):

(a) Try to predict the nature of the solution without solving the problem.

(b) Test your prediction by finding the solution and drawing its graph.

(c) Determine what happens after the sequence of impulses ends.

\[ f(t) = \sum_{k=1}^{40} (-1)^{k+1} \delta(t - 11k/4) \]