

## Problem 23

The position of a certain lightly damped oscillator satisfies the initial value problem

$$y'' + 0.1y' + y = \sum_{k=1}^{20} (-1)^{k+1} \delta(t - k\pi), \quad y(0) = 0, \quad y'(0) = 0.$$

Observe that, except for the damping term, this problem is the same as Problem 18.

- (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.