

## Problem 24

In each of Problems 24 through 27, find the Laplace transform  $Y(s) = \mathcal{L}\{y\}$  of the solution of the given initial value problem. A method of determining the inverse transform is developed in Section 6.3. You may wish to refer to Problems 21 through 24 in Section 6.1.

$$y'' + 4y = \begin{cases} 1, & 0 \leq t < \pi, \\ 0, & \pi \leq t < \infty; \end{cases} \quad y(0) = 1, \quad y'(0) = 0$$