One-Dimensional Transient Heat Transfer with Source

Consider the data in Table 12.1, which describes a one-dimensional system subjected to a transient source. We shall determine the temperature as a function of time at five locations in the solid: ξ = 0.0, 0.25, 0.5, 0.75, and 1.0. In obtaining the solution, we note that pdepe requires three functions: (1) one to define the partial differential equation, which we call **pde1D**; (2) one to define the initial conditions, which we call **pdeIC**; and (3) one to define the boundary conditions, which we call **pdeBC**. The boundary and initial conditions are summarized in Table 12.1.

