Heat Transfer Coefficient for Laminar Flow in a Pipe

We shall use pdepe to solve the governing equation for the standard boundary conditions: (i) constant wall temperature and (ii) constant heat flux. It is assumed that we have laminar flow with Re = 40 and Pr = 5, and the pipe radius R = 0.01 m and the pipe length L = 0.5 m. In addition, we assume that the boundary condition for constant heat flux is *qw* = 10 W/, the boundary condition for constant wall temperature is *Tw* = C, the entry condition is *T*(ξ,0), and *k* = 0.6W/(m K).