Unit 33. Pre-Class Quiz Questions

1. True or false? The axial dispersion model uses diffusion coefficients for the species to account for their diffusion in the axial direction.
2. The dispersion coefficient can sometimes be found in correlations of
   a. the radial Reynolds number as a function of the Peclet number
   b. the axial Nusselt number as a function of the Reynolds number
   c. the axial Peclet number as a function of the radial Peclet number
   d. the axial Peclet number as a function of the Reynolds number
   e. the axial Nusselt number as a function of the Schmidt number
3. True or false? The dispersion number is the reciprocal of the axial Peclet number.
4. True or false? The axial dispersion model with Danckwerts boundary conditions represents a mixed initial value type of partial differential equation.
5. The Danckwerts boundary condition at the reactor outlet requires
   a. that the flow of A far upstream of the reactor entrance must be equal to the net flow of A (due to convection and mixing) at the outlet from the reactor.
   b. that the inlet flow of A at the inlet to the reactor equal the outlet flow of A at t = 0.
   c. that the flow of A far downstream of the reactor entrance must be equal to the net flow of A (due to convection and mixing) at the outlet from the reactor.
   d. that the concentration stops changing at the point where the flow leaves the reactor.
   e. that the concentration stops changing at the point far downstream from where the flow leaves the reactor.