Unit 11. Pre-Class Quiz Questions

1. The limiting values of the age function are
   a. $F(0) = 1$ and $F(1) = \infty$
   b. $F(1) = 0$ and $F(\infty) = \infty$
   c. $F(0) = 1$ and $F(1) = \infty$
   d. $F(0) = 0$ and $F(\infty) = 1$
   e. $F(0) = -\infty$ and $F(1) = \infty$
2. True or false? When collecting kinetics data, it is preferable to operate the laboratory reactor adiabatically.
3. The age function is measured by applying a stimulus and measuring a response.
   a. The stimulus is applied at the inlet to the reactor and the response is measured at the inlet to the reactor.
   b. The stimulus is applied at the outlet from the reactor and the response is measured at the outlet from the reactor.
   c. The stimulus is applied at the outlet from the reactor and the response is measured at the inlet to the reactor.
   d. The stimulus is applied at the inlet to the reactor and the response is measured at the outlet from the reactor.
   e. The stimulus can be applied at either the inlet or the outlet of the reactor, and the response is measured at the other location.
4. When measuring the age function for a chemical reactor, it is common to use (select all that are correct)
   a. a step change stimulus
   b. a sine wave stimulus
   c. a shock wave stimulus
   d. an impulse stimulus
   e. an electric shock stimulus
5. True or false? A fluid element is something that is added to the flow and behaves just like the rest of the fluid, but at the same time can be easily detected at the outlet.