Unit 15. Pre-Class Quiz Questions

1. The half-life of a reaction is
   a. One half of the length of time that the reaction has been operated in commercial practice
   b. The point where additional safety precautions become necessary due to weakening of the reactor walls
   c. The time it takes to perform half of the experiments needed for a kinetic data analysis
   d. The reciprocal of the time it takes for the concentration of a product to increase to double its initial value
   e. The time it takes for the concentration of a reactant to decrease to one-half of its initial value
2. Before the PFR design equation can be integrated, it is necessary to separate the variables and
   a. factor the numerator
   b. factor the denominator
   c. express all variables as a function of axial position, z
   d. express all variables other than the dependent and independent variables in terms of the dependent and independent variables
   e. eliminate the pressure drop
3. True or false? The definition of space time and space velocity for a PFR are the same as for a CSTR.
4. True or false? If a batch reactor is operated in the preferred manner, the design equation is an algebraic equation that can be directly fit to experimental data.
5. True or false? Even though the pressure and temperature are constant in a gas phase PFR, the volumetric flow rate may vary along the length of the reactor.