**Chemical Engineering 374**

**Reading Questions 7—Chapter 5.3, 5.5**

**Name** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How is “mechanical energy” defined and how does “flow work” relate to this definition and lead to the inclusion of P/ as one form of mechanical energy?
2. What are the three components considered in the mechanical energy?
3. Actual fluid-handling mechanical devices are less than 100% efficient. What happens to the mechaical energy that is lost by these devices?
4. In the derivation of the energy equation from the First Law of Thermodynamics, the work done on the system is divided into what two forms of work?
5. In Equations 5.62 and 5.63, separate inlet and outlet velocities are shown for given streams, compared with the integral forms in Equation 5.60. What limitation does that place on the use of Equations 5.62 and 5.63?