**Chemical Engineering 374**

**Reading Questions 9—Chapter 5.6**

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

1. In the derivation of the steady-state mechanical energy equation, how were the internal energy and heat-transfer terms converted into a mechanical energy “loss” and what does that mean in terms of the definition of that loss?
2. In your own words, why is the “kinetic energy correction factor” needed?
3. Under the conditions of Example 5-12, what magnitude (approximate) temperature rise would you expect if the water was recirculated through the pump 100 times?
4. Examples 5-13 and 5-15 have similar geometries, but the flow directions differ. How was the mechanical energy equation formulated in each case to specify the direction?