**Chemical Engineering 374**

**Reading Questions 6—Chapter 5.1-5.2**

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

1. Figure 5-8 represents the application of the Reynolds Transport Theorem to the conservation of mass. What ultimately happened to the term on the left side of the equals sign?
2. What is the advantage of constructing control volumes so that the control surfaces are normal to the incoming and outgoing flows?
3. How do the authors define steady flow?
4. For incompressible, steady flow, how can Equation 5-18 be simplified?
5. You should memorize the mass flux equation 5-7. Write it here and remember it.
6. How do you find a flow rate through a surface when the velocity is not constant?