**Chemical Engineering 374**

**Reading Questions 22—Chapter 14.1-14.2**

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

1. What is the definitional difference between a pump and a turbine? By what criteria is a pump further defined into a fan, a blower, and a compressor?
2. Why is the brake horsepower of a pump always greater than the power actually delivered to the fluid?
3. At what point on the pump performance curve would we ideally like to have a pump operate?
4. In Example 14-1, if the minor losses could be neglected, in which direction would the operating point move in Figure 14-13?
5. Why would the net positive suction head of a pump be dependent on fluid temperature (see Example 14-3 and Figure 14-21)?
6. For two pumps in series, how was the curve for three pumps (top line) obtained in Figure 14-23?
7. For two pumps in parallel, how was the curve for three pumps (right line) obtained in Figure 14-24?
8. Why is an overpressure protection system needed for positive-displacement pumps?
9. When are multistage axial-flow pumps used (i.e., to provide what type of performance?