**Chemical Engineering 374**

**Reading Questions 15—Chapter 8.7**

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

1. For flow through pipes in series, what are the basic rules governing flow rate and head loss?
2. For flow through pipes in parallel, what are the basic rules governing flow rate and head loss?
3. Why is a pump that can supply the required head and flow rate not necessarily a good choice for a piping system?
4. In the solution in Example 8-7, the various equations are numbered.
   1. Which equations specify that the two pipelines are in parallel?
   2. Which equation specifies that the pump performance will draw 8 kW of power while pumping the total flow of the two pipes?
5. In the discussion at the end of Example 8-8, the authors state that the head loss would be increased from 27.9 m to 35.9 m if the valve were three-fourths closed. What coefficient in the calculation would be altered (from what original value to what new value) to produce this change?
6. In Example 8-9, are the pipes to the toilet and shower in series or in parallel? What single equation in the solution reflects that relationship?