Test 3 Homework Reflection

Homework 3.1 involved solving pipe systems in series by calculating flow rate, energy losses, pipe diameter, K value, and pipe length. In order to determine flow rate or pipe diameter, a trial and error process was used, where the Bernoulli's equation was simplified and all losses were added in, setting the equation to equal all known values and picking an unknown value to iterate until it matches the known value.

Homework 3.2 was focused on pipe systems in parallel, which was also solved using a trial and error process. The Bernoulli's equation was set up in its simplest form and an equation was created for each branch, applying all the appropriate energy losses to each equation. It is important to be careful in getting the correct flow rate with the right energy loss as the flow rate changes when pipes branch off. The pressure changes from point A to Point B are the same, but the energy losses will be different. The iteration process is done until the values match within 1%.

Homework 3.3 was centered around selecting pumps. It began with determining whether a positive displacement pump or a kinetic pump was needed. For a kinetic pump, the pump's required head was calculated using Bernoulli's equation, and then the appropriate pump was selected using the charts in the catalog. This process allows for the proper selection of a pump to meet the specific needs of a system.