Michael Delacruz

Exam 2 Reflection

MET 330

Professor Ayala

This test showed the usage of the Bernoulli's Equation. The objectives achieved in this test were explaining the fluid dynamics in pipes and fittings, applying the principles of conservation of energy, and mass to fluid flow systems, and the computation of friction losses in pipes for a variety of configurations.

On the first problem, I used Microsoft Excel to find the turbulent friction factor. I used the equation $f_t = (0.25)/\left(\log\left(\frac{1}{3.7\left(\frac{D}{\varepsilon}\right)}\right)\right)^2$. This gave me an f_t value of .0268. This value caused my numbers to be slightly off when computing the energy losses. The velocities I found were almost identical to the solution, however, I forgot to solve for flow rates in the units of gallons per minute. For the second problem, I did not use the right points to solve for the flow rate. I did not use the right points when solving for energy losses in the closed system. This combined with incorrect procedure led to wrong answers. I should have placed my points at the top of the fountain and the surface of the water, for the first part. For the second part, I should have just used two points on the surface of the water as it was a closed system. For the most part I followed the format.

Based on this effort, I would give myself a 50/90 based on the mistakes made on the test. The rubric was mostly followed but the calculations were mostly wrong on the second problem.

From this test I learned how to manipulate Bernoulli's Equation in order to find certain variables. Engineers may use this in the design process of many systems. It is important to learn this because of the potential opportunities presented in the industry. I felt like I was improving upon being able to visualize the concepts in the second unit. I see a potential overlap of the content in a career potentially in the Navy.