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<center>Test 2 Reflection</center>

During this test, my work is in reference to the objective 'explain the fluid dynamics in pipes and fittings' as both problems had dealt with steel and PVC pipes respectfully along with the fittings such as elbows and valves.

In terms of my work compared to the solutions there are a few differences. For problem 1 to start in the solution, it solved the elbows and valves along with Bernoulli's equation while I solved for them separately as minor loss was solved first and with the value I integrated into Bernoulli's. As a way to shortcut the procedure. I thought solving for the velocities then for the flowrates would be easier, but I was trying to cut corners which as I can see wasn't the best method. While in the end the velocities didn't violate the criterion the values are off and had done correctly by way of the solution those values would've been different. As Q3 turned out to be off by 4 gallons per minute and the velocities mainly V23 was off by quite a bit. Next time I will just do everything all together and not try to cut corners as its clear that the results won't be as accurate if I solve for sections separately. I was on the right track, but that one factor completely skewed everything. For problem 2 at first it was similar but when it came to solving for energy loss that's where problems start as I didn't account for the elbows as I stupidly forgot about them. Not to mention I completely forgot to solve for the correct flow rate as I solved for exit and not highest point. Leaving those out completely ruined this problem as I was missing factors which resulted in a different head loss, pump work, everything. I was rushing through this

problem thinking it was a simple but in doing so I neglected to account for everything. In the future I will be sure to allocate my time better as I spent most of my time on problem 1 and didn't pay enough attention which came back and bite me. Right start, and everything went downhill.

Based on the rubric given I believe my grade should be 49.25. As for problem 1 I believe I should have a 7/12 and for problem 2 a 4/12 which is 41.25 + 3 for HW and +5 for reflection. I believe that the strengths of my tests are that I have the right ideas on how to go about solving the problems, but I don't spend enough time analyzing them as I either forget to account for a variable or skip a process which affects the overall solution. If I fix that part of my tests, then I can be a lot more clinical on these tests.

I didn't really have any issues completing this test aside from my own negligence as I understood the problems, but the issues came from me not taking the time to fully understand what I need to account for such as elbows, certain flow rates, etc. As I did the test in a 7-hour window instead of stretching the time between the few days to take my time.

The steps I took to complete this test involved me analyzing chapter 6-12 in the textbook along with the modules provided to understand what steps are needed to be taken to fully take on the problems such as solving for minor loss, understanding Moody's chart, etc. If I were to change something it would be to incorporate the HW questions along with analyzing the example problems more to better understand what are needed to solve the problems.

A concept that I wouldn't say is new but rather understand better is that of Bernoulli's equation as last semester I had problems understanding it but now I feel more confident using it.

Engineers use the concept of Bernoulli's Principle to design airplane wings along with anything involving fluid dynamics.

I feel that I will be using everything I know in future courses and in the Air Force as that's where I would like to apply my engineering degree to. Depending on what I get assigned to me believe that some of them would involve the concepts discussed in class such as Bernoulli's Principle which will be important for me to know. But I don't know exactly how I would use it until I settle on what MOS I want to pursue.

I have not been able to apply these concepts to my work as my internship is more AutoCAD work, in terms of courses none that I can think of as of right now.

The areas I felt most improved in are applying Bernoulli's equation (for the most part) and understanding pipeline problems (for the most part) as last semester I wasn't that comfortable in them as I am now.

I feel that this course will intersect with my career as depending on the MOS I choose in the Air Force I will work with some aspects of fluid mechanics especially if I'm dealing with aircrafts.

I spent roughly 7 hours on this test, and I spent that time mostly doing it continuously with a 1 or 2 few minutes break to stretch my legs. If I were to do this differently, I would stretch this test out for the days given to complete it rather than doing it in one sitting. Which I know I've said before, but I do see progress and I know that I can do it. If I can do that then I know I can take more time to analyze problems and not make the stupid mistake is did during this test.