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MET 330
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Test 2 - Reflection

1. This test touched on almost every course objective, but the one that stood out to me the most was the open-channel flow. An open-channel hasn't really been something my mind has considered, especially in the capacity that it appeared on test 2. My mind has always gravitated toward fluid flow in pipes or regarding the flight of an aircraft. So seeing how the coursework applies to situations such as these was very interesting to me.

2. I think my test compares very poorly to the available solutions in most instances. One such mistake I made was in section C of the test. I had not considered setting the volumetric displacement of the log equal to the volumetric displacement of the water (even though I know that is technically true) because I was so fixated on finding the cross-sectional area of the entire log. As such, I set *that* equal to the volume of water displaced and ended up with a strange 83% of the logs volume equaling the quantity of water. Although this was algebraically true, it didn't get me any closer to solving the problem. If I were taking the test again, I would try to consider that solving for what is intuitive might yield the answers I am looking for as opposed to overthinking the rhetoric within the problem.

3. My grade should be, unfortunately, a failing grade. The weaknesses found in my test are understanding a general and rational approach to solving the problems. I get overwhelmed and do not know where to start most of the time. My strengths are found within my writing abilities and as such, I think it shows in the more paragraph-oriented sections of the writing rubric. That is only true though when I understand what it is I am writing about. Even with strong writing abilities, I struggle with the summary and analysis sections because I don't technically see a difference between those two words in a situation such as solving problems on a test. Though, upon reviewing Dr. Ayala's solutions, think I understand that distinction better now.

4. Discussion:

    a. The most significant issue I encountered during the test was not understanding how to solve most of the problems. Troubleshooting involved resorting to the textbook and searching for examples that looked similar to ones in the test and reviewing notes I took from class lectures.
    b. I did not complete the whole test. In order to finish the whole test I will start much sooner next time.

c. The most recent concept that I have learned is how Bernoulli's equation has helped me think more accurately about the difference between energy lost compared to energy removed, such as the resistance from pipe walls versus the consumption of energy from a turbine. Even though these are both instances where energy is lost, it is important that they are treated differently, which I find fascinating.
d. The one area that I am most familiar with where engineers use these concepts is within the reactor compartment and main propulsion units on aircraft carriers.
e. Most likely when it comes to my work as a tool engineer at Newport News Shipbuilding, my present employer.
f. I absolutely think what I am learning is important for my professional career.
g. I have had to source coolant recycling units for a metal-working fluids management project at work. This project has already required that I decide on what capacity of pumps would be required to serve the coolant consumption needs of the machine shop I currently work in.
h. I have definitely been able to apply concepts from this course at work, but not so much in other courses yet.
i. The only area I feel I was most successful in was the initial usage of Bernoulli's equation.
j. Most of the time, this course will not intersect with what I do professionally, seeing as I am a tool engineer that focuses more on the machining and metallurgy side of manufacturing. However, coolant and oil systems that feed the CNC work centers that I regularly interact with are always present. They are not my focus or concern, but should issues arise, I know that this class will have provided me with a solid background when I do interact with the technicians and manufacturers servicing these machines.
k. I probably spent about 8 hours over two days on the test. The time was not well organized and my attention was sporadic at best. I would definitely try to break the test up into much more manageable sections and give myself more consistent durations of working on the test, followed by taking short breaks, then returning to the rest, "rinse, repeat," etc.