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MET 330

Test 1 Reflection

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1) Test 1 demonstrated our knowledge of many topics, but the most relevant to me was using Bernoulli's equation to find the pressure of a system. We had to first know and understand the steps to take prior to using the equation. It was necessary to have a diagram and then place the reference and points. After doing so, we were able to use Bernoulli's equation, cancel out select parts, and then solve for the remaining variables. In order to fully solve the equation we also needed to realize that major and minor losses had to be calculated. After gathering all of these solutions, we were able to find the necessary pressure.

2) As a whole, I think my test compared okay to the solution. I think that the next time, prior to taking the test, I need to spend more time on the pretest. By having additional knowledge of the procedures that need to be completed, I believe that it would lead to a better understanding and fewer mistakes. My biggest error on the test was my poor calculation of the manometer readings. I do not think I fully understood what needed to be put in the formula and as a result I did not use nearly enough variables. I did not take into account a third point, therefore I was not able to use P3, V3^2/2g, or the hL 1-3. I should have taken all of these values into account by establishing the third point and using the more in depth version of deltaP=gammah. If I were to take the test again, I would ask to see if I was on the right track so I could possibly be given a clue that would lead me in a better direction.

3) In my opinion I should receive 5.5/7 for part one since I did not have the manometer reading correct and I did not use the correct gammah equation. 1.5/3 for part 2 because I had used bernoullis but cancelled everything until gammah was established, however I did not use the correct form of gammah for the manometer, so only my pressure was correct. I think I completed everything on excel that was necessary, 4/4. According to the grading calculation, I should receive a 70.95%.

4) A) One of my biggest challenges on this test was overthinking and not asking enough questions. If I had asked more questions, or knew the right questions to ask I think the test could have gone better. This is only something that I can fix when test 2 is issued.

   b) As previously mentioned, I should have spend more time on the pretest. As for the test itself, I would have changed using the same equation for both manometers when I should have known that would lead to error.

c) Although it may have been discussed in class, I think that I now have a better grasp on the gammah equation and how much can and does really go into calculating it.

d) For the movement of fluids in a plant, such as taking coolant from a storage holding tank to individual tanks at specific places (machine shops, boilers, control rooms, etc.) to be used to cool the system.

e) I live in a town with a paper mill where I could potentially work one day. I think these concepts could be greatly used because they use the river to cool and regulate all of their machines, which of course requires pumps, tanks, pipes, valves, etc.

f) Yes, depending on the career path I choose. I also think that completing the course project will prove this to be true.

g) I think these principles could potentially be used for the design process of a water tank of a house, especially if the house has multiple tanks that needed pressure. For example, if you had one water system that fed a garage and a house you would have to know how to calculate the necessary pressures for each location and what it would take in pipe, pumps, valves, etc to get the water from point a to point b, especially if they were not at the same elevation.

h) Not yet, but I have a feeling that will change.

i) Bernoulli's equation. At first I was a little blindsided at the possible complexity of it, but after sitting back and learning the steps it made it a lot less intimidating.

j) Any place I may work that has pipe systems or designs them can justify the use of concepts learned in fluid mechanics.

k) I would say that I probably around 10-12 hours, possibly more on the test. In order to fully understand what we were required to do I had to go back into notes and do some studying, as well as research tables and equations in the book to find what was needed. Next time, I plan to spend more time on the pretest so I can get the most feedback possible and try to find a way to ask the questions I have before I get overwhelmed.