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MET 330

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4/14/2022

Test 3 Reflection

1) Test 3 my work demonstrates my knowledge of the course objectives by first, using Bernoulli's equation and manipulating it to isolate for the variables that are unknown to solve the problem presented on test 3. Secondly, computing for the losses in pipes and fitting was clearly demonstrated in my excel file and in the first part of Problem 2.

2) Comparing my calculations and results to the provided solutions, I found that my results are almost spot on except for a small difference in the rounding. However, my process was different than the solutions. I mainly used excel to help solve for all my results including the energy losses. The solution provided handwritten calculations for this.

3) What your grade should be. Base it on the writing rubric provided in the test and the correctness of your solution. What are the strengths and weaknesses of your test?

1.	PROBLEM 1 or 2)	
1.	Reasonable assumptions (reductions, valve, tubing diam, lengths)	1/10
2.	Apply Bernoulli twice or get 2 equations from Bernoulli	1/10
3.	Consider ALL minor losses? Handled them correctly?	2/10
4.	Correctly handled the pipe losses?	1/10
5.	Obtained 3 equations with 3 unknowns?	1/10
6.	Solved system of equations correctly (Excel?)?	3/10
7.	Final results	1/10
TOTAL		10/10

FINAL GRADE:

(90)*(10/10) = 90

4) Discuss the following:

a. The biggest issues I encountered when completing the test was with my excel spreadsheet. Not that the problems were that troublesome, but due to some typos or small mistakes in some formulas, some of my data appeared to be off. After noticing the

inconsistencies, I inspected the formula well and double checked my work on a separate calculator to make sure my values were right or not. When they weren't I would have to retype my formula and find where my mistakes were coming from. In the end I was able to find them all.

b. I followed the same steps that I have been in the past. First, I took a brief look at the test the day it was available and then I started thinking of ways to go at the question I decided on. Next, I started the test the following day after it was opened. I followed the process that was taught in class using Bernoulli's/continuity equation and I obtained my 3 equations. I then began manipulating them to isolate my unknow variable. From there I wrote out my process for my excel iterations. Next, I went to excel to run my iterations. Lastly, I calculated my final flow rate value.

c. I feel like I learned how to analyze the problem better and isolate what I need to be solving for better. Also, I strengthened my skills in excel.

d. Pipes are used for so many things in everyday life, so these concepts come into play often. Like when building a new home, a main line may break off into smaller lines. The flow needs to be calculated to know how much will be flowing through each pipe.

e. I could be using this in my summer internship since the company deals with many fluids for production.

f. The job I may get after graduation or even many years down the road may involve fluids which could mean parallel pipeline systems.

g. I may have to solve for the flow rate of fluids in a system at my summer internship. The company manufactures paint essentially and this is done so by mixing many things including flids.

h. So far, I have not been able to use what I have learned in other courses or for work.

i. I feel like I improved the most in my excel skills to perform my iterations.

j. I spent around 7 or 8 hours on this test. Around 1 hour was spent on formatting my test document. Another hour was towards thinking and writing out my handwritten work. The last 5-6 hours was towards my excel iterations. I think the way I went about the test was good and I would do it the same if I had to do it again in the future.