Micajah Paynter MET 330 Dr. Orlando Ayala 3/224/2022

Test 2 Reflection

- 1. The test demonstrates my work towards a few course objectives. First, open channels played a large role in the test, and without solving for the channel depth then more than half of the test was incompletable. The next objective was buoyancy and I the test demonstrates my work towards this objective by how I went about the problem. I keep sticking to the process even though I did not immediately see the value I wanted to solve for. Another course objective was drag forces. This portion also related to the channel depth and buoyancy parts as well. The test demonstrates my work towards this objective by putting to use the formulas that I learned with drag coefficient and the drag force equation together to solve it.
- 2. My test compares to the solution very well in some places and is lacking in others. Some of the mistakes I made were careless mental mistakes that I think I made just from being exhausted from the amount of time I put into the test. For instance on part g I put F=P/A when I know that it is actually F=PA and I even stated that earlier in the test when referring to the forces in moving fluids. Also, I neglected the weight when I was solving for the reaction forces in the y. For this I am not sure why I did it because I even considered it when originally attempting the problem but then started second guessing myself.
- 3. 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?

WRITING RUBRIC (Applied to the whole test, not to particular problems)

1.	Purpose	0.5/10.0
2.	Drawings	1.0/10.0
3.	Sources	1.0/10.0
4.	Design considerations	1.0/10.0
5.	Data and variables	0.5/10.0
6.	Procedure	2.0/10.0
7.	Calculations	2.0/10.0

8.	Summary	0.5/10.0
9.	Materials	0.5/10.0
10.	Analysis	1.0/10.0
TOT	AL	10.0/10.0

PROBLEM 1)

1.	Open channel depth (y)	
a.	Correct equation	1/2
b.	Area and Hydraulic radius	1/2
2.	Pipe-elbow forces	
a.	Free body diagram and correct forces	0/3
b.	Force in x	1/3
c.	Force in y (weight)	0/3
3.	Largest wood log	
a.	Size	1/2
b.	Stable?	1/2
4.	Flow-nozzle flowmeter pressure drop	
a.	Right equation and A1/A2	1/2
b.	C value	1/2
5.	Water hammer pressure increase	
a.	Wave velocity (units?)	1/2
b.	Pressure increase	1/2
6.	Drag force on a stuck log	
a.	Correct area	1/3
b.	Correct velocity	1/3
c.	How Cd was obtained?	1/3
7.	Force on the flange	
a.	Magnitude	0.5/2

b.	Location	0/2

8. Final actual values of the results 0.5/1

10.0 + (80/10)*(2/2 + 1/3 + 2/2 + 2/2 + 2/2 + 3/3 + 0.5/2 + 0.5/1) = 59

Discuss the following:

a. What issues did you encounter in completing the test? How did you troubleshoot

them? One issue I encountered was which drag coefficient to use from the table. I obviously used the wrong value that was needed so I thought wrong on that part.

b. What steps did you take to complete the whole test? Would you change something?

I started on Friday by opening the test and trying to digest each part before going straight into working on them. Then I analyzed each portion and tried to gather all the necessary data and equations that I would need to solve for each part. Then I went through each part and solved for what the question was asking for. Lastly, I formatted everything the way it was asking for in the rubric.

c. What new concepts have you learned?

I haven't work on much open channel problems so solving that part of the test was fairly new to me.

d. Where you think engineers use those concepts (provide specific examples)?

In the design of roads there are drainage ditches for the water to runoff the road. These ditches would not work it their designs weren't based off the right specs that were given in the book.

e. Where do you think you will be using everything you learned?

Like the problem statement said if I were an engineer hired to design or modify a system that is needed to consistently transport fluid to a channel that would be used to float things such as logs.

f. Do you think what you learn is important for your professional career?

I think what I learned could be very beneficial to me in my professional career because even if the systems that I may come across aren't the same a fluid in motion will always use Bernoulli's.

g. How, when, where and why you might use this information or skill in the future?

h. Have you been able to apply concepts you have learned in the course to what you do

at work or in other courses?

So far I have not.

i. What areas did you feel you were most successful, or improved the most?

I feel like I was most successful on the parts that involved the channel or logs. All my answers matched well with the solution.

k. How much time did you spend on the test? How was the time organized? What

would you do differently? Why?

I spent around 25 hours on this test. The only thing I wish I could have done was star on the test on Thursday instead of Friday.