

- 1) How and why the test demonstrates your work toward one, or more, of the course learning objectives. Be specific on the course objectives you mention.

When taking this exam, it demonstrated my ability towards multiple course learning objectives. For part 1a) I had to utilize the “Explain the fluid dynamics in pipes and fittings” because the drawing mentioned a pipe fitting. Using the textbook I was able to find the right measurement to plug in. Another course objective was the “Apply the principles of conservation of energy (Bernoulli’s equation) and mass to fluid flow systems” to find the right height of the tank to produce flow of 400 gpm.

- 2) How does my test compare to the solution? What advice would I give to myself?

The mistakes I made in 1a) was solving for the height using Bernoulli's Equation. I didn't equal z_1 to $h+0.5$ when solving for h and I solved for Area without knowing the area I used was already the solved cross section for Diameter (0.0686). For these mistakes, I have to read carefully what is given to me in the textbook and the lecture slides. For 1b) I selected a small U-tube size for the left and right side when it should've been bigger, like 16mm. To fix this error, I should've used trial and error to solve for the numbers and see if it makes sense. The second error, I applied the formula “ $\gamma \cdot h$ ” However, I used it wrong to solve for h . For this case, there is nothing to do besides read what the question is asking to mark out the redundant terms in the equation. For 1c) I utilized the wrong area formula causing me to solve the wrong Diameter, also the minor loss. Next time, USE the cylinder formula for tanks. For 2, this question I struggled the most, I got some things right, however there was a lot missing and when I don't understand something I should have reached out more.

- 3) What should my grade be? Strengths and weaknesses.

After grading, my final grade is 56.7%. My strengths when taking this test was knowing which formulas (some) were used and knowing when the textbook was required to find specific values like pipes and sg. Weaknesses, I struggled using the formulas correctly and using an excel sheet.

- 4) Discuss the following

- a) What issues did I encounter?

-For the most part, figuring out how to start the problems. To troubleshoot this, I utilized the pretest activity and after using the hints given, I got an idea on how to solve the problems.

- b) Steps taken to solve the problems? Changes?

- The steps I used was to first look at the notes and the textbook. Next look at the pretest information you sent out to get a rough Idea on how to start. After that, I used the textbook to find the values I needed to use and from

there, I solved the problems. Some changes I would've made was to at least try to finish the pre-test when submitting so I can get more input on how to start.

- c) New concepts learned?
 - I learned how to use bernoulli's equation, the concept behind pipe fittings, and excels in engineering.
- d) Where do engineers use these concepts?
 - From looking at the exam, I feel that engineers use these concepts when it comes to transportation with fluids like sewer systems, gas moving through pipes because this exam went over pipe fittings and u tubes. This is important because we can't just use any pipe fittings or any measurements.
- e) Where do I think I will be using everything I learned?
 - After graduation, I will be commissioning in the Navy. I feel these concepts can be used on ships or submarines.
- f) What I learned is important to my professional career?
 - Yes, if I get selected to be stationed in a ship or submarine, I will have an idea on how to operate some mechanical equipment.
- g) How, when, where, and why I might use this skill in the future?
 - Same thing I stated in e and f.
- h) Have I applied what I learned in other courses?
 - As of now only the lab portion of Fluid Mechanics.
- i) What areas were I successful, or improved the most?
 - The only area I feel I was successful was utilizing the textbook to find values needed.
- j) How does this course content intersect with my career?
 - I can see that I can utilize what I learn from this course in the Navy and some engineering field jobs outside.
- k) How much time was spent on the test?
 - I worked on this test everyday since it was assigned till the last day. It tried to at least solve one problem a day and to use the last day to double check everything. I wouldn't do anything differently because I felt this was the best way to balance everything given NROTC and my course load.