Test 1 reflection

This test demonstrates the topic study in chapter 6, the flow of fluids and Bernoulli's equations. The first problem I seem to get the equation correct. I used 62.4 lb/ft^s for water density but the solution showed 62.2 lb/ft^s which could be the reason for a different result. For problem 2 my first mistake was converting meter to feet. I made the conversion because of the unit of the pipes. I feel that it might have been easy to keep everything SI unit and only convert the pipes instead of converting everything else. For the procedure, for the most part, I did that correctly. For the excel part of both problems, I wasn't what was expected but as far as putting in the equation I felt that I understood how to apply it to excel. I ran into a problem when identifying the friction losses because of some friction energy losses in this test, I do not remember it being covered in class. For example, the energy losses of the elbows so I had to go back in the textbook and read more on frictions. I think these concepts are used by engineers in all types of situations, such as designing a water system for the water tower. I could use what I learn now during my job as a designer in a piping department at Newport News Shipbuilding. Over, I felt that I was successful in solving problem 1. If I must guess, I spent overall 20 hours on and off in the 3 days' time. I learned a lot from this test and it is important as it could help me advance in my current job and give me more knowledge towards my goal of becoming an engineer.

WRITING RUBRIC

| | | |
|---|---|---|
| 1. | Purpose | 0.4/10.0 |
| 2. | Drawings | 1.0/10.0 |
| 3. | Sources | 1.0/10.0 |
| 4. | Design considerations | 0.7/10.0 |
| 5. | Data and variables | 0.7.5/10.0 |
| 6. | Procedure | 0.85/10.0 |
| 7. | Calculations | 0.9/10.0 |
| 8. | Summary | 0.7/10.0 |
| 9. | Materials | 1.0/10.0 |
| 10. | Analysis | 0.8/10.0 |
| **TOTAL** | | **7.65/10.0** |

PROBLEM 1)

| | | |
|---|---|---|
| 1. | Identify all unknown dimensions in drawing | 1/7 out of 1/7 |
| 2. | Cancel the distance with water (x) | 0.9/7 out of 1/7 |
| 3. | Solve for the gasoline distance (y) | 0.9/7 out of 1/7 |
| 4. | Correct excel spreadsheet | 0.65/7 out of 1/7 |
| 5. | Using excel, get mercury case | 0.65/7 out of 1/7 |
| 6. | Why results make sense and manometer length | 0.7/7 out of 1/7 |
| 7. | Final results | 0.8/7 out of 1/7 |
| **TOTAL** | | **5.6/7 out of 7/7** |

PROBLEM 2)

1. Select pipe diameter using 3 m/s 0.7/9 out of 1/9
2. Compute all energy losses 0.65/9 out of 1/9
3. h_A and pump power 0.65/9 out of 1/9
4. Pressure at pump inlet 0.65/9 out of 1/9
5. Correct excel spreadsheet 0.65/9 out of 1/9
6. Pump power for 4 other pipe sizes 0.6/9 out of 1/9
7. Installation, operating, and total costs 0.6/9 out of 1/9
8. What is the best pipe diameter? 0.6/9 out of 1/9
9. Final results 0.6/9 out of 1/9

**TOTAL** **5.7 /9** out of 9/9

FINAL GRADE:

**10.0 + (80/2)*(5.6/7+5.7/9) = 71.7**