## Problem 2

- Reasonable assumptions (reduction, valve, tubing diam, lengths) 1/10
  A: My assumption where reasonable. I made assumptions about the following,
- 2) Apply Bernoulli twice or get 2 equations from Bernoulli 1/10A: I applied Bernoulli equation on each branch.
- Consider all minor losses. Handled them correctly. Handled them correctly. 2/10
  A: I accounted for all the minor losses in each branch and handled them correctly
- 4) Correctly handled the pipe losses. 1/10 A: I correctly calculated the friction losses in the pipe by performing the calculations to determine the Reynolds number is a turbulent flow. Moody chart was used to determine friction factor. And losses were calculated. This is where we used a different friction factor and caused our answers to be different. I used. 0.2 and the professor used 0.7. I did considernusingn0.7 and did until I found another reference in the book recommending 0.2 for schedule 40 steel.
- 5) Obtained 3 equations with 3 unknowns. 1/10A: I obtained two equations with only one unknown, so I was able to solve for Q2.
- 6) Solved system of equations correctly (Excel) 3/10A. I solved all the equations correctly.
- 7) Final results 10/10

Total 10/10

Final Grade:

(100) \* (10/10) = 100

- 1) My learning experiences in MET 330 have included understanding the nature of fluids, primarily the nature of water. We looked at the nature of a few coolants, however most of our work was primarily focused on the nature of water.
- 2) 8 questions to be answered using (visual, audio or written)
  - My learning is demonstrated using writing out the problems and recording videos of me working out the problems. Here are the videos of me working out my test. Link: <u>Contact</u> <u>| Colby Burnam (odu.edu)</u>
- 3) Have to taking this class and what ways have you improved as an engineer what brought about those improvements. I have improved as an engineer because I have learned the importance of blocking time for solution
- 1. I have realized that blocking time is a effective tool for solving long engineering problems

- 2. My biggest accomplishment in this course was when I felt like I fully understood minor losses are equal to the required energy input from pump to overcome the losses.
- 3. The skills that I mastered in this course were creating equations equal to each other and then performing iterations in excel to find the percent difference between the two as a way to find an unknown.
- 4. My strengths are combining each individual loss to come up with a total flow rate, my weaknesses are dealing with the multiple branches because that means multiple runs of the equations.
- 5. The way I thought about this course before I took it was that it was extremely hard and was going to be very challenging. Now that it is over, I feel like I don't know why I was so intimidated by it because this is basic math and I was just letting the complexity of the iterations be intimidating. Many of my assumptions have changed because my understanding of this material has grown I think because of my application of theory in my work.