Test #3 Reflection

This test made me demonstrate what I have learned in several of the course objectives. The first and major one is Bernoulli's equation and the conservation of energy and mass. This test made me use my knowledge in this by making me derive my own equation from Bernoulli's equation two different times. The other main course objective that this test made me use is computing friction losses in pipes for series and parallel systems. The test made me use my knowledge in this because I had to compute the losses in the pipes and in all the fittings and valves.

My test compared to the test solutions is different in some ways but similar in others. The very first thing I noticed was that I used the wrong K value for the sprinklers which throwed me calculations off. I understood that I needed to use Bernoulli's equation and that I had to compute the losses in all the pipes and fittings. I came up with an equation from point A to B and a different equation from point A to C. I also came up with the friction losses between A and B and between A and C. This part I understood but after this I messed it all up. For the energy losses I seem to have left out a couple variables and used several wrong values for things. For the Bernoulli's side of the problem, I also left out several variables and used incorrect values. Furthermore, I used the wrong flow rate for the supplied water at the beginning of the system when messed up my calculations even more. I also had trouble with using the correct units and converting them correctly. All of this combined really messed up my final results and they are not the same as the test solutions. If I could go back and take this test again, I would want to know Bernoulli's equation and how to compute the friction losses better. If I could give myself advice on having a successful test, I would tell myself to start studying Bernoulli's equation from day 1 of the class.

The issues I encountered in this test was understanding Bernoulli's equation fully and how to compute friction losses. The steps I took to complete this whole test were that I studied and worked problems before the test was even available. I then worked on the test everyday that it was available so I wouldn't get burned out or be crammed at the last minute. The two new concepts I tried to learn were Bernoulli's equation and friction losses. I would say engineers use these concepts in situations such as the one in this test. Watering systems for golf courses or sprinkler systems for fire in buildings. I imagine I will have to use this knowledge at a job in the future. Yes, I believe what I learned is important for my career. I imagine I will use this at a future job if I am designing piping for any type of fluid. No, I have not been able to apply anything from this class to where I work or other classes yet. I feel I was most successful in understanding the theory and logic behind it. I imagine this courses content will intersect my career basically as soon as I get a job. I spent around 15 hours on this test. This time was organized over all the days the test was available and it was split between rereading the material and doing calculations. If I could do anything differently, I would spend even more time on the test and preparing for it before it is available to us which is how I feel about the whole course. I could have understood the material way better if this class was stretched out over two semesters.

PROBLEM 1 or 2:

Reasonable assumptions (reductions, valve, tubing diam, lengths)	1/10
Apply Bernoulli twice or get 2 equations from Bernoulli	1/10
Consider ALL minor losses? Handled them correctly?	1/10
Correctly handled the pipe losses?	0.5/10
Obtained 3 equations with 3 unknowns?	0/10
Solved system of equations correctly (Excel?)?	1.5/10
Final Results	0.5/10
TOTAL	5.5/10

FINAL GRADE:

(90)*(5.5/10) = 49.5