Erich Schimpf 3rd Test reflection

Going into test 3, I was already at a bit of a disadvantage as I missed the second-class covering iterations with excel. I spent a day or 2 just going over the excel before I even looked at the test, as I wanted to understand as much as I could with a fresh mind.

When I got the test, it was very apparent to me that 2 was much easier for me to visualize, as there were 2 separate paths that both needed to be considered.

For the first part of the second problem, the goal was to find the pressure drop in a series pipeline, or a class 1 series problem. This was relatively straightforward, as there was no change in elevation, with a pressure change purely dictated by the energy losses in the pipe.

When Bernoulli's was applied, you can cancel everything minus the pressures, the energy losses, and the gamma.

From here, velocity, Reynolds number, and the friction factor were calculated, allowing you to calculate H sub L.

From there, your P2-P1, or Delta P, can be found.

On the second half, the first thing I did was identify the goal of the problem, which was to isolate and determine Q in each section of the system.

I started by defining the paths, and, unbeknown to me at the time, in reshaping and re-dictating the problem to match the examples given, made several mistakes in the future accounting for all aspects of the problem.

I applied Bernoulli's to obtain 2 equations, the first being the straight away and the second being the one with the bends. This second equation was more complicated, as it had to account for the bends, the different K value of a bend in a T, the reducers, and the change in diameter and length. I believe I did this all correct

I identified all the known variables I could, then set out to make an excel sheet, trying to base it as much as possible off the example, to try to stay on track. During this, I went back and renamed a lot of my variables to be more similar to the example as my ABC got me confused with the excels 123. It definitely was a source of error for me, and a very stupid one at that.

I ended up overthinking the problem and making simple mistakes with the main channel of the system, getting a flow rate half of that of the answer sheets. I think this is because I only considered part of its path, 600/1500 ft, as I was more fixated on the bend part. I was able to get a correct Q for that bend, but because I neglected to fully consider the Q for the straightaway, my total Q was less than the correct value.

All in all, I believe my execution of the problem mirrored the example and steps laid out for us, but due to mental fatigue at the time, arrived at an incorrect answer and didn't think enough to double check it.

## 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?	2/10
Handled correctly the pipe losses? .	5/10
Obtained 3 equations with 3 unknowns?	1/10
Solved system of equations correctly (Excel?)?	2.75/10
Final results .75	/10
TOTAL 9/10	)

FINAL GRADE:

(90)\*(10/10) = 90 (90)\*(9/10) = 81