1. My test shows progress towards bullet points 5 and 7 of the syllabus. Primarily, “Apply Rankine Cycle with superheating, re-heating, and regeneration to steam power plants” and “Define the thermal efficiency, second law efficiency, and energy availability.” I was able to understand **what** the problems were asking for. My main issue lied in the fact that I just couldn’t figure out exactly where to start. I had some key concepts nailed down like the overall structure of the diagrams for the problem. Despite me being stuck on the space heater, I could figure out the rest rather effectively. I knew how to read the problem and mentally piece together where a pump needed to go, and how that affected temperature and pressure.For bullet point 7, I was able to solve the equations for the net work done by the turbine by using the variables given to me (y1=y2) accordingly for their corresponding processes.

2. My test compared to my original test solution isn’t right. I could argue that it’s in the “ballpark” but that doesn’t really mean it’s correct. I focused a lot on writing a schematic for the problem in the solution first before considering drawing the P-v and T-s diagram. The main thing that was confusing me was, “The fluid returns from the space heating as a saturated liquid, gets throttled to condenser pressure to then enter the condenser.” I don’t know why this confused me so much that I was questioning the rest of my schematic. For context, I was using the in-class example of 10-77 as reference to draw my schematic. In hindsight, it was very straightforward but I just had never seen something like that before in a problem so I was rather confused. My initial mistake was drawing the space heater between the pump and the feedwater heater. Then, I put a step where a throttle went back around to the condenser. Doesn’t make much sense at all really, but it did at the time. This justified the shape I then wrote for the P-v and T-s diagrams which excluded the way steps 9 and 10 were written on the solution. I had the overall structure right but if I drew the space heater in the right spot, the numbering

would have been different.

From then on, the mistakes kept piling up. That was the major mistake that led to me miscalculating mostly everything. I had more P-constant variables in my work compared to the solution. I had some consistent values but that was only some compared to the whole thing.

If I was taking the test again, I would have told myself to not overthink the problem and to simply go for it. If this resulted in me finishing with more time ahead, I would've been able to study my own work and maybe figure out that my solution was incorrect which would've prompted me to fix it to a more accurate schematic, and P-v and T-s diagram.

My main issue was time. I frankly did not have the best surrounding circumstances in my life to be able to finish the test with clarity at home but when I did, I was still stuck on the start instead of going for it. I should have given myself more time to work. This would have let me do a more thorough completion of the problem since I was basically at the stage of simply working problems out but I was racing against the clock.

3. Some of the rubric is unclear to me but I believe I could've been able to achieve a low D for my grade. It's not great but I made a strong effort to work through it. The strength of my test is that I showed thoroughly all my calculations and where I was going with them. The weakness is that obviously it was incorrect and the beginning just set me on a path of not getting the numbers correct to be accurate. However, if my initial diagrams and processes were correct, my answers and procedures would've been much more accurate. My other main weakness is that it's incomplete.

4. I will discuss the following:
    a. I mainly encountered the issue of properly writing out the schematic but the diagrams made more sense to me. I resolved it by settling for an option and just going forward with it.
    b. I started with a schematic, then the diagrams, then all the step processes, and then moving forward with the other solutions that rely on the first three steps I mentioned. I would not change the steps at all.
    c. I've learned the concept of regeneration on a more thorough level and I was able to understand the language behind what's being asked for these types of steam power plant Rankine questions. I've especially been able to understand thermal efficiency and the utilization factor concept better now.
    d. I know for a fact that these concepts like regenerative, cogenerative, and reheat Rankine cycles are used a lot for Power Plants where engineers are designing/troubleshooting the thermal process that goes on in them.
    e. I think I'll be using these concepts for thermal processes that involve power plants or factories that use heat as a main source, or are even affected by heat. I know this information will be way more vital if it's in a job where HVAC is my concern from an engineering standpoint.
    f. I absolutely do think that these concepts are important for my career.
    g. I believe I'll mainly use this information to design and problem-solve any mechanical project that involves heating or heat efficiency. Especially if I have to solve ways to remove extra steps or sources of heat like a boiler.
    h. I have not been able to apply what I learned at work nor in another class.
    i. I improved the most with understanding how to map out the P-v and T-s and diagrams and how to follow those in order to complete solving the variables in all of the steps within the process.

j. I’m not quite sure how I’ll see it interact. I don’t have a special career path in mind for the type of engineering I’m going to do, but I’m sure it will intersect if I’m troubleshooting an issue with thermal systems.

k. I spent plenty of hours on the test but since I was stuck with how to start, I decided to cross-reference the homework and other examples within the book. That way, I could have the most accurate blueprint for the rest of the test. I would probably ask for time off at work because my full time job takes a lot of my energy away over the weekend. It’s hard to handle at times.