1) Test 1 demonstrates my work towards Developing an understanding of how to apply the first law of thermodynamics to different thermal systems. In problem number 1, I needed to use the 1st law to find the volume in different stages multiple times.

2) On problem number 1, I set up my p-v and t-s diagrams just like in the solution. I got the correct answer when solving for the thermal efficiency and the mass flow rate but not the effectiveness. When solving for effectiveness, I set up the equation wrong which led to me getting the wrong answer. Instead, next time I will make sure I'm setting up my equations correctly and double-check before turning my test in.

   On problem number 2, my p-v diagram is set up right but my t-s diagram is a little off. When setting up my stages, my first problem was not using the tables to get the variables. This led to all of my variables through the rest of the problem being wrong. Instead, next time, I will make sure to read the problem carefully to make sure I know when to use the tables.

3)

PROBLEM 1)

1. P-v and T-s diagrams — 1/9 out of 1/9
2. State calculations (7 of them – including 5a) — 4/9 out of 4/9
   For 6 -> Balance HX using 5a
3. Efficiency and mass flow rate calculation — 2/9 out of 2/9
   w_out4-5, w_in1-2 (use isent eff or 5a), qin3-4
4. New HX effectiveness — 0/9 out of 1/9
5. Final results — 0.5/9 out of 1/9

TOTAL — **7.5/9 out of 9/9**

PROBLEM 2)

1. P-v and T-s diagrams — 0.5/9 out of 1/9
2. State calculations (8 of them – including 3a and 5a) — 2/9 out of 4/9
   Use 500 kJ/kg -> Compressor & Turbine
   Cp and Cv are variable

3. Pressure (P5) 1/9 out of 1/9
4. Velocity (V6) Use h5a 1/9 out of 1/9
5. Thrust 0.5/9 out of 1/9
6. Final results 0/9 out of 1/9

TOTAL **5/9 out of 9/9**

FINAL GRADE (if everything is correct):

10.0 + (80/2)*(7.5/+5/9) = 65.5

A) I had problems with finding out how many stages there were going to be because of the regeneration and reheating process. I solved this by going back to recent homework or classwork problems and tried to figure out why we solved it the way we did. This helped me fully understand where its coming from and helped showed me where we pull variables from.

B) Something I did during this test that I believed helped me was starting and coming back to it every now and then rather than staying on it all at once. This helps my brain get a refresh if I ever get to a point to where I need a break. I sometimes come back with brand-new ideas that may help.

C) I learned how to draw and use PV and TS diagrams. I also learned when to use the tables and where to look for variables for my diagrams.

D) I think that these would be used in places like power plants and to study jet engines

E) If I go into the engineering field, these will be being used all the time.

F) I think that learning how to draw and organize PV and TS diagrams is important and will help me in my professional career.

G) I would use these concepts if I needed to analyze any thermodynamic properties maybe for my job or for someone who might need it.

H) I haven’t yet been able to apply these concepts to anything I've done at work. But I've had classes that relate to these concepts, like thermodynamics.

I) I feel like I was most successful in drawing my diagrams and choosing the right equations for the right system.

J) I see this course helping me in my future when I go to pursue a job in the engineering field

K) I spent at least 8 hours total solving the problems on this test spread out throughout the week. I did this so I could take breaks and wouldn’t be stressed while taking the test