WRITING RUBRIC (Applied to the whole test, not to particular problems)

1.	Purpose	0.5/10.0
2.	Drawings	1.0/10.0
3.	Sources	1.0/10.0
4.	Design considerations	1.0/10.0
5.	Data and variables	0.5/10.0
6.	Procedure	2.0/10.0
7.	Calculations	2.0/10.0
8.	Summary	0.5/10.0
9.	Materials	0.5/10.0
10.	Analysis	1.0/10.0
	TOTAL	**10.0/10.0**

PROBLEM 1)

1.	Actual cycle diagram	1/14
2.	P-v and T-s diagrams	2/14
3.	State calculations (10 of them)	2/14
4.	Double interpolation for state 6	0/14
5.	Calculate y1	0.5/14
6.	Turbine work	0.75/14
7.	Mass flow rate	0.75/14 d
8.	Heat rate at space heating	0/14
9.	Heat released in condenser	0/14
10.	Utilization factor (need pumps & Qin)	1/14
11.	Final results	0/14 wrong answers
	TOTAL	**14/14**

FINAL GRADE:

10.0 + (80)*(8/14) = 55.71

1) The objectives used were: Develop an intuitive understanding of how to apply the first and the second law of thermodynamics to different thermal systems and apply thermodynamics laws to gas turbine Engines using ideal cycles, reheating regeneration, and inter-cooling cycles. The first law of thermodynamics was used heavily in this exam when finding Qin and y1 when applied to the free water heater. The cycle we were working on had regeneration.

2) I made a couple of mistakes; first, I did not do the double interpolation for state six, and then when calculating y1, I had the right idea of what to do, but used the wrong enthalpy (h) values.

For the turbine work as well as the mass flow rate, I had the partial equations, which is why I gave myself partial points. I should have added I did not calculate the heat released or gained correctly, and my final results were overall incorrect. If I were to take this test again, when looking at the practice problems I would have realized that I need to change the specific enthalpies to match what is going on in the problem.

3) Based on the writing rubric provided in the test and the correctness of your solution, I graded myself to be a 55.71. My strengths for this test were the PV/TS Diagrams as well as the cycle diagram, and my weakness was probably missing the enthalpies and incorrect states.

4) Discuss the following:
a. One issue I encountered was that I wasn't sure which equations to use based on the notes - for example there are several different Qin equations that you can use so I just picked the one for regeneration. I made sure to correspond the practice problems with the notes to see if it was the right one.
b. I noticed that the order of the problems to solve (A-H) could be mixed up, for example I did the diagrams first, and then the steps, and THEN problem a. I wouldn’t change how I completed the test.
c. What new concepts have you learned? These concepts we have been doing through practice problems and lectures so it wasn't technically anything new.
d. Engineers use these concepts at steam power plants, heating systems, and most of the U.S power plants use steam turbines.
e. I can keep using it in this class for our homeworks and tests when looking at the PV and TS diagrams.
f. Of course it is important, heating systems that use turbines to produce energy are huge in the United States.
g. I don't think that I want to go into this field of study, but learning how to create system diagrams is definitely helpful.
h. I have not been able to apply concepts I have learned in the course to what you do at work or in other courses.
i. I have improved the most in completing the whole exam instead of just leaving the parts that I don’t know how to do.
j. I don’t really see this course’s content intersecting with your field or career, I am more interested in fluids.
k. I spent a good amount of time on this test, however it was difficult because our fluids exam slightly overlapped with the thermal exam., so that knocked off two days. I wouldn't do anything differently.