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MET350

Test Reflection 2

1) **How and why the test demonstrates your work toward one, or more, of the course learning objectives. Be specific on the course objectives you decide to mention.**
    a.
2) **How your test compares against the available solution. State the mistakes you made and what you will do next time to avoid making same mistakes. Please point out exactly where you made the mistake, say why you made the mistake, and how you should have done it. If you were taking this test again, what advice would you give yourself to ensure that you had a successful test?**
    a.
3) **What your grade should be. Base it on the writing rubric provided in the test and the correctness of your solution. What are the strengths and weaknesses of your test?**

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

Purpose	**0.5/10.0**
Drawings	**1.0/10.0**
Sources	**1.0/10.0**
Design considerations	**1.0/10.0**
Data and variables	**0.5/10.0**
Procedure	**2.0/10.0**
Calculations	**2.0/10.0**
Summary	**0.5/10.0**
Materials	**0.5/10.0**
Analysis	**1.0/10.0**
TOTAL	**10.0/10.0**

PROBLEM 1)

Actual cycle diagram **0/14**

P-v and T-s diagrams	**2/14**
State calculations (10 of them)	**2/14**
Double interpolation for state 6	**1/14**
Calculate y1	**1/14**
Turbine work	**1/14**
Mass flow rate	**1/14**
Heat rate at space heating	**1/14**
Heat released in condenser	**1/14**
Utilization factor (need pumps & Qin)	**2/14**
Final results	**0/14**
TOTAL	**12/14**

FINAL GRADE:

10.0 + (80)*(12/14) = 78.57

4) Discuss the following:

a. What issues did you encounter in completing the test? How did you troubleshoot them?

I forgot the first law as applied to heat exchangers, which was a critical part of finding the fraction of steam y1, and the way I fixed it was remembering after contacting Professor Ayala.

a. What steps did you take to complete the whole test? Would you change something?

i. The steps are outlined in the Procedure section, but a broad overview is that I:

1. Drew P-v and T-s diagrams for the cycle
2. Evaluated states using the tables, interpolation, and formulas for isentropic pumps.
3. Used the state information to calculate the answers to the questions.

b. What new concepts have you learned?

i. I have learned how to apply knowledge of thermodynamic systems to the Rankine cycle with freewater heaters, turbines, and regeneration. This includes learning about FWH, both open and closed, utilization factor, and process heaters.

c. **Where you think engineers use those concepts (provide specific examples)?**
    i. Engineers use these when designing the power plants and thermodynamic systems that provide us our energy, such as a coal power plant.
d. **Where do you think you will be using everything you learned?**
    i.
e. **Do you think what you learn is important for your professional career?**
    i. It might be, thermodynamics and fluid mechanics are deeply interrelated in a way.
f. **How, when, where and why you might use this information or skill in the future?**
    i. I could work to develop and assist in determining characteristics of thermodynamic systems and cycles like this one**.**
g. **Have you been able to apply concepts you have learned in the course to what you do at work or in other courses?**
    i. Cavitation occurs in a pipe when the lowest P in the system is lower than the saturation pressure of the liquid at a given temperature.
h. **What areas did you feel you were most successful, or improved the most?**
    i. I definitely got the states and understood the problem a lot better than I did in class, this is because I did the homework.
i. **How do you see this course's content intersecting with your field or career?**
    i. I'll probably have to consider thermodynamics effects in my field.
j. **How much time did you spend on the test? How was the time organized? What would you do differently? Why?**
    i. I spent about seven hours total, spread over four days. I wish I had more time to dedicate to documenting my process.