

Test #1 Reflection

1. This test demonstrates principles of convection, thermal resistance and steady state conduction as they are applied with calculations. These problem analysis calculations proved real life situations and specifics regarding heat collection air temperature and overall heat transfer.
2. After reviewing the Test 1 solutions and comparing them to my own work it is apparent that I did not follow the rubric given. I focused on the calculations instead of writing out my thought analysis and drawing out the thermal circuit. I did not include a purpose, sources, or any type of drawing of figure regarding the steps for either problem, a summary, materials used, or a analysis portion. When looking at how my calculations for problem 1 differ from the given solution I see that I am missing critical values in my initial resistance computation. Following my Q calculation, it looks like I had the proper values (although not correct). This trend follows part (b.) (c.) and (d.) I feel that I have the correct equations I just didn't fulfill the accurate resistance values. For problem 2 calculation my answer was very close to the correct, but it seems that I used my math knowledge of function ratios rather than do single iterations with a table as shown in the solutions. If I were to take this test again, I would write out each key point of the test rubric including the purpose, sources, or any type of drawing of figure regarding the steps for either problem, a summary, materials used, or a analysis portion. I think my anxiety about getting the correct answer narrowed the scope of the problem and left more room for error. I would also take my time when solving calculus problems to ensure I am including all required values. A lot of information is used when making these calculations and it can be overwhelming, in my opinion.
3. I would grade myself a 5 out of 10 for writing portions, a 6 out of 14 for Problem 1 & a 5 out 6 for problem 2. My weaknesses were not following the rubric and not including critical values when making calculations. My strengths were knowing when to apply certain principles and using known equations to solve for an answer.
4.
 - a. I was challenged with having to accurately identify the thermal path for the plate and calculating the resistances.
 - b. using the given data and applying it to the problem given using the known equations I have used was my approach to each section of each problem.
 - c. I was able to learn and better apply thermal resistance to surface materials.
 - d. Designing hot water systems would require an engineer to use these concepts of heat transfer.
 - e. I am currently employed at HVAC company so if I am ever asked to design a heat exchanger I will need to use these concepts.