

Test 2 Reflection

Test 2 demonstrated course object Solve steady one-dimensional heat convection problems through a soft wear COMSOL.

The mistake I made on the test was when solving for C2 I forgot to carry down the negative that belonged the K_o , when I canceled the 2 K_o , I didn't bring that one down. Due to the forgotten negative sign, I make mistakes when simplify the final T equation. My initial equation for heat transfer was incorrect. When comparing the heat transfer in COMSOL, I di the compare with using the integral of a surface at $r=b$ command and the command total heat flux of the z axis using the 3d point cut I made at the top of the hemisphere.

Using the rubric provided by the professor I would give myself the following grade.

$$10+(80/2)+(7.5/10+4.5/10)=70$$

Issues did you encounter in completing the test was taking the integral of the temperature equation, and I handle it by taking it slow. The steps I took while taking the was to take it slow. I first got the equation I needed then I rewrote the math I did for that part looking for any error I may have made the next day, so it would be like look at it brand new. Then I solved the problem in COMSOL. I think I would have done the same this but maybe triple check my math since I missed a negative sign that messed me up from that point on. New concept I have learned is how to solve a heat transfer problem with heat generation and using COMSOL. Engineer would use this information any time designing a device or system that has heat being generated inside of it. one example of this is designing hair product that use heat to get a desired look, for example a flat iron. I have not used this information in my career or past class, but I might use this information if I were to get a job that delt with any type of engine or product/ system that would involve heat generation. Areas I felt I was most successful was the COMSOL part. The areas I could improve is the math proportion. In total I spent around 12 hours on the test but broke it up into 2 days. The 1st day I did question 1. The second day I rewrote question 1 looking for mistakes and answered question 2.