

Course Title or Topic

Course Number: Homework Number

Reread the homework requirements before starting this homework, they are :

- Include your name and the date on each page of the homework.
- Number and restate each problem in your homework.
- Clearly list all assumptions made while solving each problem.
- Show all work, clearly and in order, if you want to get full credit. I reserve the right to take off points if I cannot see how you arrived at your answer (even if your final answer is correct).
- Justify your answers algebraically whenever possible to ensure full credit.
- Show all units when substituting values into equations and clearly show any unit conversion.
- Clearly indicate your final answer (box your answer or otherwise highlight it).
- Please keep your written answers brief; be clear and to the point. I will take points off for rambling and for incorrect or irrelevant statements.
- Reference the source of any data or constants.
- This homework has 3 problems and is worth 35 points, partial credit will be given for incomplete answers. If you are not sure how to answer a problem give as much information as you can.
- Good luck!

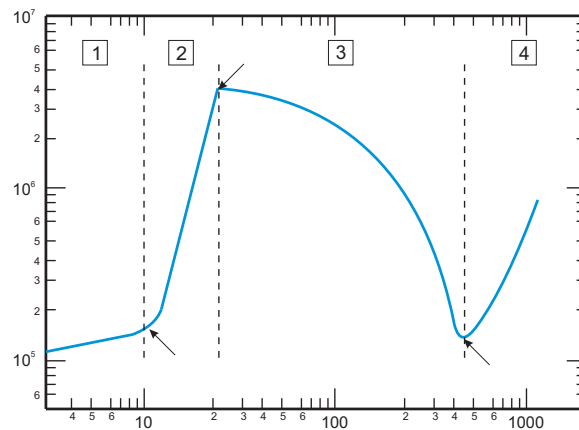
1. (5 points) How many mass, energy, and momentum equations are used in a homogeneous equilibrium model? What additional assumptions are made to provide enough equations to completely specify two-phase fluid conditions at all points?

2. (15 points) Using the secant method approximate the solution to the following function to within three significant digits. Use an initial guess of $x_0 = 1$ and $x_1 = 2$. Show all work!

$$2.5x^2 - 3x = 9.75$$

3. (15 points) For the following pool boiling curve:

a. (10 pts) Label both the X and Y axis with the proper label and units. Label the temperatures indicated by the arrows and give a brief description of what each represents.



b. (5 pts) For each region indicated by the number 1-4 in the figure above, give the name of the region and a brief description of the boiling in that region.