AE331 HEAT TRANSFER
Online Quiz, No 1
November 4, 2020
(open notes and books)

Rules for the quiz

1. Your camera and microphone should be open during the quiz (you can reduce your speaker's volume if the voice is bothering you but you should not reduce the volume of your microphone)
2. You should not communicate with anybody during the quiz.
3. You should sit in front of your computer where the assistants can clearly see you even if you finish the quiz earlier.
4. You should be alone during the quiz.
5. Please sign the following statements and upload this page with your solution papers.

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I affirm that all the work done on this quiz is my own; have obeyed the rules indicated above and I have not given or received any help during this quiz. I understand that any indication of violation of this word of honor may lead to a zero grade on this quiz and to a disciplinary action.

Name: ID number: Date/Signature:

Question
Duration: 15 min for solution + 10 min for uploading

Assume that you have a plain wall with a thickness of a.b m. In a steady-state condition, the left and right surfaces of the wall are kept at ab and ba K, respectively. The following polynomial equation (with respect to temperature) is used to define the conductivity coefficient of the wall.

$$k = a + bT$$ (if a or b is zero, you should use a non-zero digit from your id number)

a) Calculate the temperature distribution inside the wall.
b) Calculate the heat flux from the left and right surfaces.

Where "a" and "b" are the symbols that represent the last two digits of your id number. For example, if your id number is 7134251 = 71342ab, then a=5, b=1.