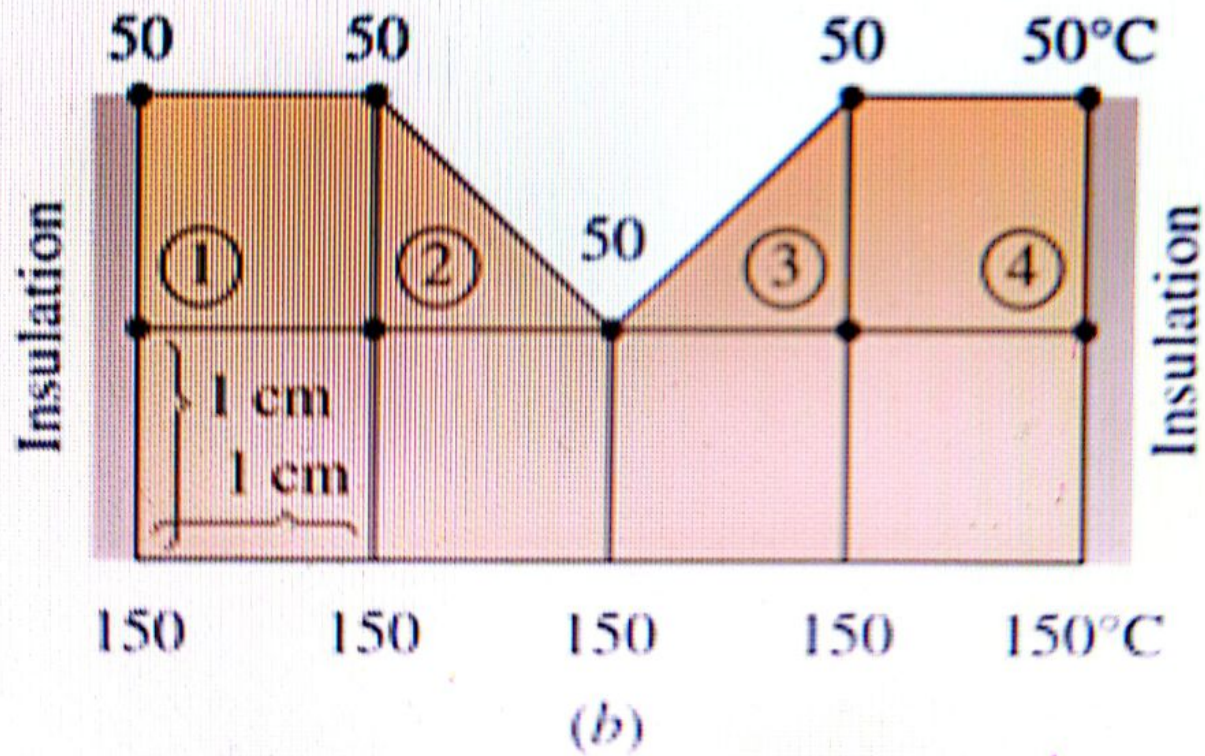


5.

5-85 Consider steady two-dimensional heat transfer in two long solid bars whose cross sections are given in Fig. P5-85. The measured temperatures at selected points on the outer surfaces are as shown. The thermal conductivity of the body is $k = 20 \text{ W/m}\cdot\text{K}$, and there is no heat generation. Using the finite

difference method with a mesh size of $\Delta x = \Delta y = 1.0 \text{ cm}$, determine the temperatures at the indicated points in the medium. *Hint:* Take advantage of symmetry. *Answers:* (b)

$$T_1 = T_4 = 93^\circ\text{C}, T_2 = T_3 = 86^\circ\text{C}$$



6.