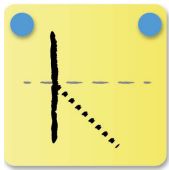


Lecture 4 - Question 8

Give temperature profile for the following case. Assume one-dimensional steady-state heat transfer.

1



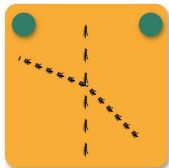
Since the highest temperature is given to be on the left, the temperature profile should decrease linearly from that point on, for a wall.

2



This decrease continues as x increases.

3



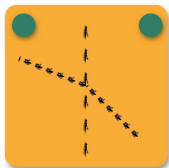
At the intersection the gradient should become steeper, this because the conductivity decreases and so will the thermal resistance increase.

4



After the intersection the temperature should decrease linearly again.

5



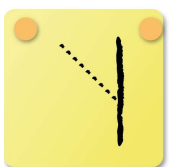
At the second intersection the gradient should become steeper, this because the conductivity decreases and so will the thermal resistance increase.

6



After the second intersection the temperature should decrease linearly again.

7



At the right the temperature is the lowest and for that reason it should end with a linear decrease.