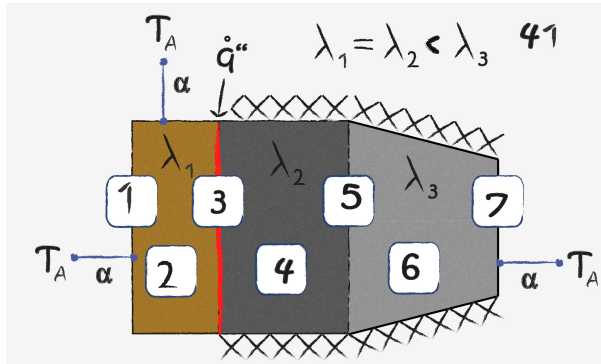


Heat Conduction: Task 41



The image describes two rectangular and one trapezoid wall. Second and third wall are adiabatic and at the end of the first wall's line there is a heat flux. Consider heat conductivity 1 and 2 is equal. ($\lambda_1 = \lambda_2$)

1



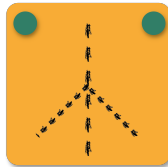
The Temperature gradient on the left side is decreasing.

2



Due to heat loss through convection, the temperature gradient decreases from right to left.

3



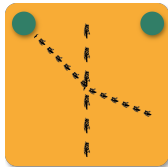
Due to the heat production at the interface and because λ_1 equals λ_2 , so the temperature gradients on the left and right side of the interface are decreasing equally.

4



According to Fourier's law. At constant area and heat conductivity the temperature gradient decreases linearly from left to right.

5



λ_2 is smaller than λ_3 which means the Temperature gradient in 2 is steeper than in 3.

6



The temperature gradient increases by decreasing the area.