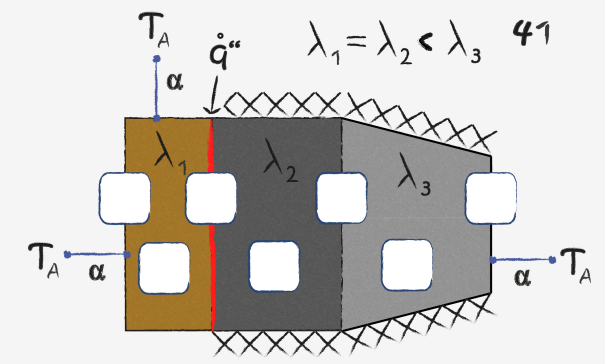
Heat Conduction: Task 41



The image describes two rectangular and one trepazoid 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. (λ_1=λ_2)

1 

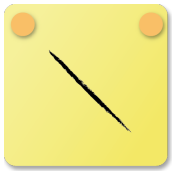
The Temperature gradient on the left side is decreasing.

2 

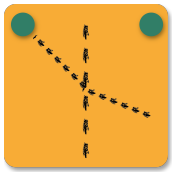
Due to heat loss through convection, the temperature gradient decreases from right to left.

3 

Due to the lower heat resistance more heat is conducted to the left. Equal thermal conductivities λ_1 and λ_2 yield a steeper temperature profile to the left.

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.