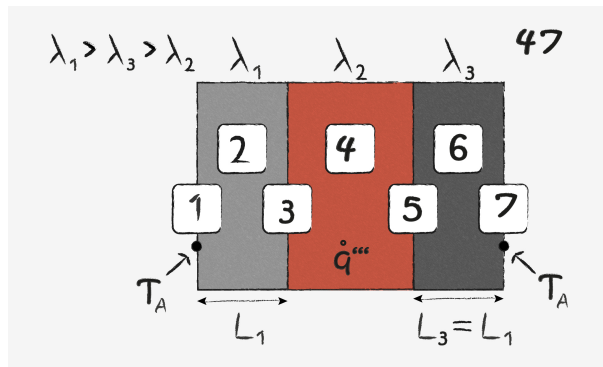# Heat Conduction: Task 47

The images describes three rectangular walls, the first and the third wall have the same length. Temperatures in the left and the right are the same. Consider that there is a heat source in the middle and heat conductivity differences.
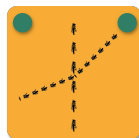
1

Heat flows from the center to the right and left side so the temperature gradient on the left side is decreasing from right to left.

2

According to Fourier's law. At constant area and heat conductivity the temperature gradient decreases linearly from right to left.
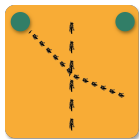
3

λ_2 is smaller than λ_1 which means the temperature gradient in 2 is steeper than in 1.

4

The heat flows to the right and to the left so there must be a temperature maximum in area 2 and since the thermal resistance in area 1 is smaller than in area 3 (λ_1 larger than λ_3) , the temperature gradient to the left is steeper than to the right.

5

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

6

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

7

Heat flows from the center to the right and left side so the temperature gradient on the right side is decreasing from left to right.