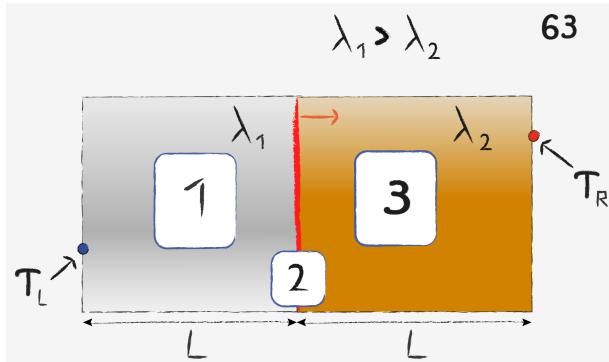




Heat Conduction: Task 63



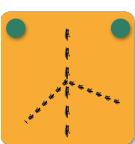
The image illustrates a body with two different thermal conductivities. The left and the right temperature are given. At the interface between the two materials, a line heat source exist. The arrow illustrates that there is a heat flux from the line source to the right.

1



The temperature gradient is linear and positive because of the lower temperature on the left side.

2



The temperature on the left side is lower than on the right side. Thus, there is a heat flow from the left compartment to the right. In addition, the arrow shows the existence of a heat flow from left to right. Because of the identical length and the linear slope, the gradient in the left compartment needs to be higher than in the right compartment.

3



The temperature gradient is linear. Due to the heat flux from right to left, the slope is negative.