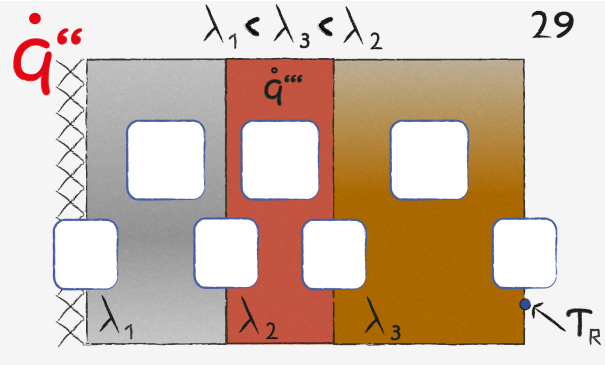
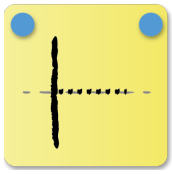
Axial Heat Flux: Task 29



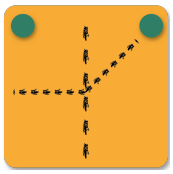
The image describes a rectangular body consisting of three sections with different thermal conductivities. The central section contains a volumetric heat source. The left wall is isolated and therefore adiabatic.

1 

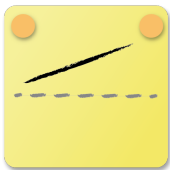
Due to the adiabatic wall, no heat is conducted at the left boundary.

2 

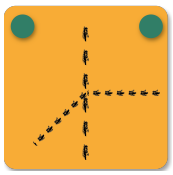
Since neither a heat source nor a heat sink acts in the first section, heat flux is zero.

3 

The transition is characterized by a kink from constant to increase, since it marks the beginning of the heat source.

4 

The volumetric heat source yields a linearly increasing specific heat flux.

5 

The transition is characterized by a kink from increase to constant, since it marks the end of the heat source.

6 

As the area is constant, the specific heat flux is so too.

7 

Heat flux remains at a constant level to the right boundary.