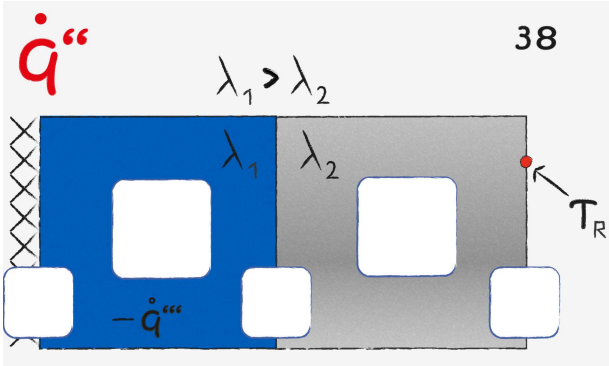
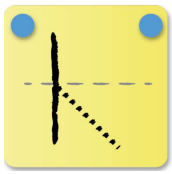
Axial Heat Flux: Task 38



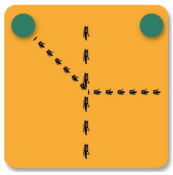
The image describes a rectangular body with a volumetric heat sink in the left section. The left wall is adiabatic.

1 

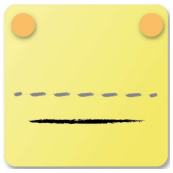
Due to the adiabatic boundary, heat flux is zero at the left.

2 

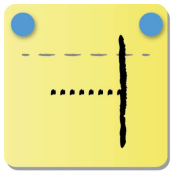
The volumetric character of the heat sink forces the heat flux to decrease in a linear manner.

3 

The transition is marked by a kink in specific heat flux, since the heat sink ends here. The change in thermal conductivity is without effect on the heat flux profile.

4 

Cross section is constant and no source or sink terms are present, hence the specific heat flux is conserved in this section ...

5 

... and remains constant towards the right.