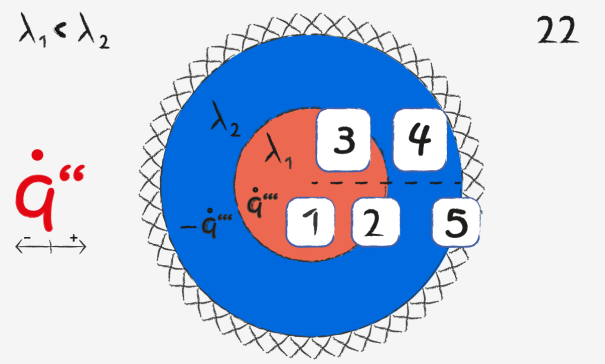
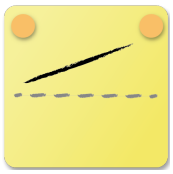
# Axial Heat Flux: Task 22




The image describes a cylindrical body consisting of to layers of infinite expansion. The inner compartment contains a volumetric heat source while the outer compartment contains a volumetric heat sink.

1 

Due to symmetry reasons, the specific heat flux at the center is zero.

2 

The volumetric heat source causes the specific heat flux to increase linearly.

3 

The transition is characterized by a kink in specific heat flux, as it marks the ending of the volumetric heat source and beginning of the volumetric heat sink.

4 

The volumetric heat sink causes the specific heat flux to decrease proportional to $r - \frac{r_\mathrm{i}^2}{r}$, where $r_\mathrm{i}$ describes the radius of the inner compartment.

5 

Since the outer wall is adiabatic, the heat flux approaches zero at the boundary.