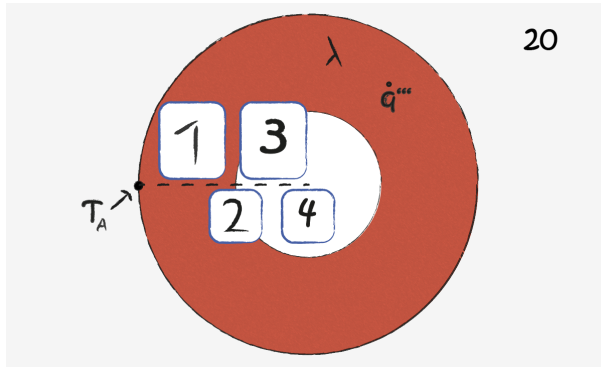




Heat Conduction: Task 20



20

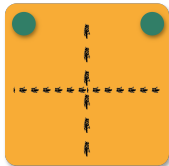
The image describes a cylindrical body of infinite expansion with heat production in the outer part. The inner compartment doesn't conduct heat.

1



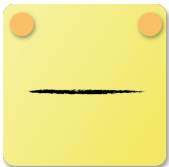
To meet the condition on the right side, the temperature gradient is zero. Due to the constantly increasing heat-flux (heat source), the temperature gradient increases constantly with the radius.

2



To meet the condition on the right side, the temperature gradient is zero at the interface.

3



There is no heat transport through the white area so the temperature gradient remain zero.

4



Due to symmetry reasons, the temperature gradient in the center is zero.