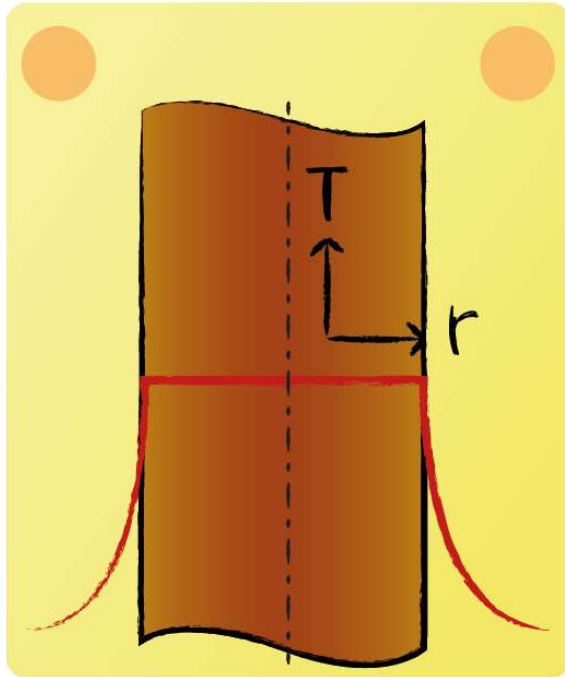


## Lecture 14 - Question 6



Select the terms that apply to the lumped capacity model.

$$\theta^* = 1 - e^{-\frac{\alpha A}{\rho c_p V} t}$$



**Body and environment dependent** - The convection coefficient  $\alpha$  depends on the properties of the body as well as on the environmental properties.

**Transient** - The temperature of the body is changing over time. For that the heat transfer can be characterized to be transient.

**Homogeneous body temperature** - The lumped capacity model is applicable to cases where  $Bi \ll 1$ , here the difference of the temperature within a body is so small, that it is negligible. For that reason a homogeneous temperature can be assumed.