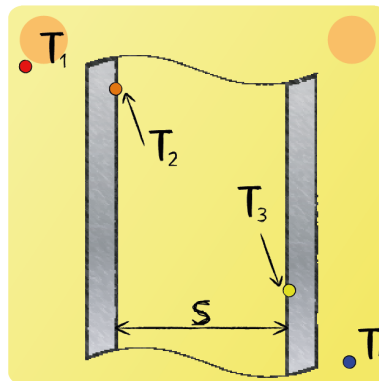# Lecture 11 Question 1

A fluid is between two surfaces. Both surfaces are isothermal. Select the correct definition of the Grashof number for enclosed natural convection.

The standard expression for the Grashof number is:

$$\text{Gr} = \frac{g\beta\left(T_\text{H} - T_\text{L}\right)L_\text{c}^3}{\nu^2}$$

In this case, the Grashof number used for determining the rate of heat transfer from the left plate to the right plate should be determined.

In that case, the characteristic length is:

$$L_\text{c} = s$$

And it is given that $T_3 < T_2$.

So we can define the Grashof number as:

$$\text{Gr} = \frac{g\beta\left(T_2 - T_3\right)s^3}{\nu^2}$$