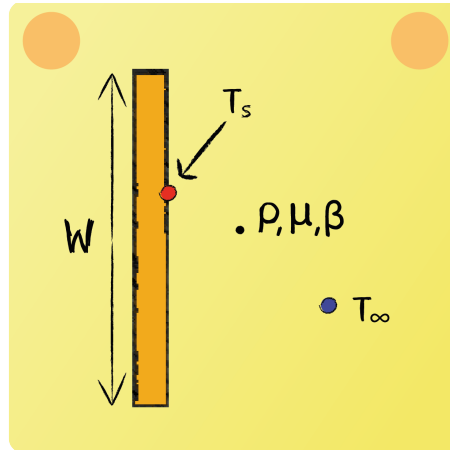


## Lecture 04 - Grashof 01

Give an expression for the Grashof number  $Gr$ , in terms of the given variables.



Grashof number:

$$Gr = \frac{g\beta (T_s - T_\infty) L_c^3}{\nu^2}$$

Where the kinematic viscosity can be expressed as:

$$\nu = \frac{\rho}{\mu}$$

And the characteristic length for the sketched situation:

$$L_c = W$$

So:

$$Gr = \frac{\rho^2 g \beta (T_s - T_\infty) W^3}{\mu^2}$$