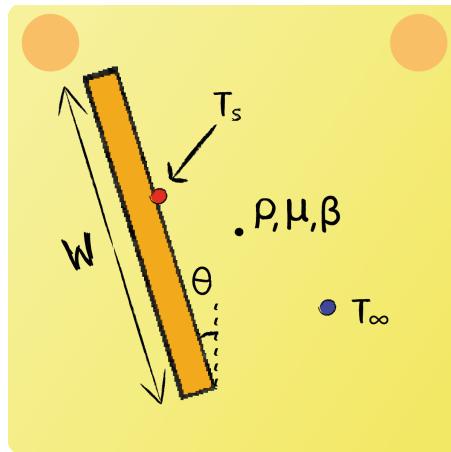


Lecture 04 - Grashof 02

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



Grashof number:

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

Where the kinematic viscosity can be expressed as:

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

And the characteristic length for the sketched situation:

$$L_c = W$$

Lastly, for a vertical inclined plate g should be replaced by $g \cos \theta$

So:

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