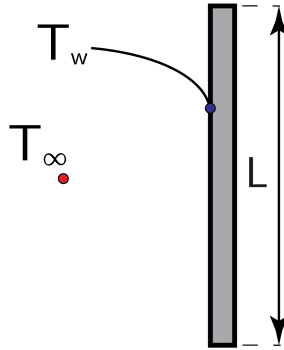


Grashof Number 02

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



The standard expression for the Grashof number is:

$$\text{Gr} = \frac{g\beta (T_H - T_L) L_c^3}{\nu^2}$$

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

In that case, the characteristic length is:

$$L_c = L$$

And it is given that $T_w < T_\infty$.

So we can define the Grashof number as:

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