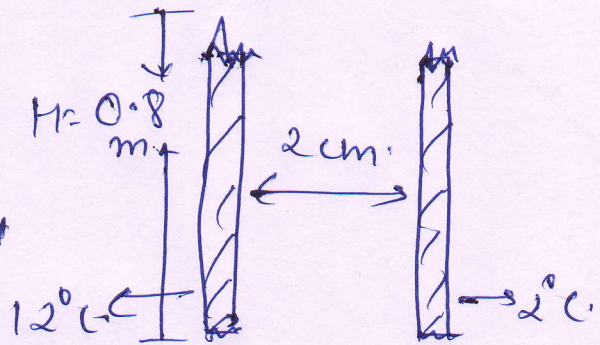# Tutorial - 10

Q. Heat loss through double-pane window and critical gap

Two glass pane window is to be installed for cold region. The ambient temp. outside house is ~~12°C~~ 2°C and inside is maintained at 12°C. (i) Calculate the total ~~convective~~ heat loss from the window.

(ii) How much ~~to~~ gap should be maintained between 2 glass pane to minimize heat loss?

(iii) If the glass used in window is having good transmissivity for Infrared radiations, how much heat ~~loss~~ will take place through radiative heat transfer.

(iv) Comment on comparison of convective heat loss & radiative heat loss. What should be desirable property of glass in this case?

given, K(glass) = 0.02416 W/(mK).
Pr = 0.7344, width of window = 2 m,
γ(air) = ~~8~~ 1.4 × 10⁻⁵ m²/s.