
Example

A double pane window is 40 cm high and 1 m wide. The air gap between the two pieces of glass is 1 cm. The inside and outside temperatures of the window are 22°C and -15°C, respectively. Neglecting the thermal resistance of the glass,

- calculate the rate of heat transfer through the glass ignoring the effects of natural convection; i.e., if heat transfer is by conduction only.
- Calculate the rate of heat transfer through the window considering natural convection.
- Repeat part b) if the gap thickness is increased to 2 cm. Discuss the results.

