Summary of the section 2

convection is the temperature between the fluid and solid.
there are two kinds of convections. The first one is natural convection (hot air goes up because of the lower density). And the second one is force conviction(wind power and load).
The area has the vice versa relation with the heat transfer.
The thickness of the glass does not have a specific effect, especially in double-pane windows.
The air between two sheets of glasses has the most important effect.
Natural convection will happen in the air gap (in the double-pane window) and the standard size of the air gap is between 6mm to 13mm.

$$R_{wall} = \frac{L}{kA} \qquad R_{conv} = \frac{1}{h_{1A}} \qquad \dot{Q} = \frac{T\infty 1 - T\infty 2}{R_{total}}$$

$$R_{conv_1} = \frac{1}{10 \times 1.5 \times 0.8} = 0.0833$$

$$R_{conv_2} = \frac{1}{40 \times 1.5 \times 0.8} = 0.0208$$

$$R_{g1} = R_{g2} = \frac{L}{KA} = \frac{0.006}{0.78 \times 1.5 \times 0.8} = 0.00641$$

$$R_{air} = \frac{L}{KA} = \frac{0.013}{0.026 \times 1.5 \times 0.8} = 0.4166$$

$$R_{total} = 0.53352$$

$$\dot{Q} = \frac{T\infty 1 - T\infty 2}{R_{total}} = \frac{20 - (-10)}{0.53352} = 56.23031$$