Week1-submission

A short summary about the conductive heat transfer:

Conductive heat transfer takes place when there is a temperature gradient in objects or other mediums.
The energy transfer always from more energetic to less energetic.
The heat transfer relate to thermal conductivity of materials, material thickness and heat transfer area.
Different materials have different thermal conductivity.

solving the same exercise with L= 0.4 m, A= 20 m2, DeltaT= 25, and k=0.78 W/m K using both simple method and using the resistance concept

Simple method :
$$\dot{Q} = kA\frac{\Delta T}{L} = 0.78 * 20 * \frac{25}{0.4} = 975W$$

Resistance concept :
$$R_{wall} = \frac{L}{kA} = \frac{0.4}{0.78 * 20} \approx 0.0256\ ℃/W$$

$$\dot{Q} = \frac{\Delta T}{R_{Wall}} = \frac{25}{0.0256} \approx 976.6\ W$$