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Task 1 : Week 1: A short summary about the conductive heat transfer and solving the same exercise with L= 0.4 m, A= 20 m2, Delta T= 25,
and k=0.78 W/m K using both simple method and using the resistance concept

1. Summary of conductive heat transfer,
Heat can only be transferred through three means: conduction, convection and radiation.
Explaining conductive heat transfer in detail,
The conduction is the amount of heat transfer through Solid state of matter. Conductivity= Willingness of the material to transfer heat.

Steady State Heat Conduction in Plane Wall.

$$\dot{Q} = \frac{dQ}{dt} = W$$

Conductive heat transfer takes place in solids because of temperature differences between various parts of the solid.
Heat transfer through a wall is proportional to its Area. More is the thickness of the wall, less is the heat transferred. IT is inversely proportional to the thickness. The nit of conductivity is (w/mK).

2. 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.

i. Simple Method:
$$\dot{Q} = kA \frac{\blacktriangle T}{L}$$

$$= 0.78*20 \frac{25}{0.4}$$

=975 W

ii. Resistance Method:
$$R \text{ wall} = \frac{L}{kA}$$

$$= \frac{0.4}{0.78*20}$$

=0.0256

$$\dot{Q} = \frac{\blacktriangle T}{Rwall}$$

$$= \frac{25}{0.0256}$$

=976.56 W