Week 1 submission_ Vesa Shasivari

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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

$\dot{Q}$ = kA $\frac{\Delta T}{L}$ = 00.78$\frac{W}{mK}$ x$\frac{25k}{0.4m}$ $= 975W$

$$R_{wall} = \frac{L}{kA} = \frac{0.4m}{0.78W/mK * 20m2} = 0.0256°C/W$$

$$\dot{Q} = \frac{\Delta T}{R_{Wall}} = \frac{25}{0.0256} = 976.5625W$$

Summary about the conductive heat transfer

Conductivity is the ability or willingness of a material to transfer heat.
In steady operations the heat transfer through the wall is constant.

According to Fourier's law -
Heat transfer through the wall is proportional to its area **A** also it is proportional to the difference in temperature ΔT and the conductivity . The larger the wall (bigger the area) more heat can be transferred.
and the thicker the wall, less heat can be transferred.