ALEJANDRA MONDRAGON 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

$$\dot{Q} = kA \times \frac{\Delta T}{L}$$

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

$$Rwall = \frac{L}{kA} = \frac{0.4}{0.78 * 20} = 0.0256\ °C/W$$

$$\dot{Q} = \frac{\Delta T}{R_{Wall}} = \frac{25}{0.0256} = 976.56\ W$$

CONDUCTION AND CONVECTION

Steady state heat conduction in plane wall

- The conduction of the heat on a wall is difference between the tempeture and the conductivines of the material
- Is proportional to the average thermal conductivity and proportional to the wall thickness

Thermal resistance concept

- Depends on the geometry and the thermal properties of the material.
- The tempeture drop is proportional to its thermal resistance