

## Week 4

Wood	Foam
0.03	0.03
0.14	0.14
0.11	0.11
No	3.428 → 3.528
0.63	No
0.079	0.079
0.12	0.12
1.109	3.899 → 4.007

$$A_{total} = 100 \text{ m}^2, \quad \Delta T = 24 \text{ c}$$

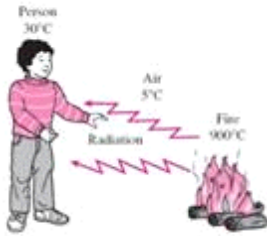
$$U_{total} = U_{wood} * \frac{A_{wood}}{A_{total}} + U_{ins} * \frac{A_{ins}}{A_{total}} = 0.25 * U_{wood} + 0.75 * U_{ins}$$

$$U_{total} = 0.25 * 0.9017 + 0.75 * 0.2495 = 0.412$$

$$U_{wood} = \frac{1}{R'_{wood}} = \frac{1}{1.109} = 0.9017$$

$$U_{ins} = \frac{1}{R'_{ins}} = \frac{1}{4.007} = 0.2495$$

$$Q_{total} = U_{total} * A_{total} * \Delta T = 0.412 * 100 * 24 = 988.8$$



**RADIATION:** conduction and convection require matter to transfer heat. Radiation is a heat transfer that doesn't need matters between object to transfer heat . Radiation is a form of energy transport made of electromagnetic waves traveling at the speed of light.

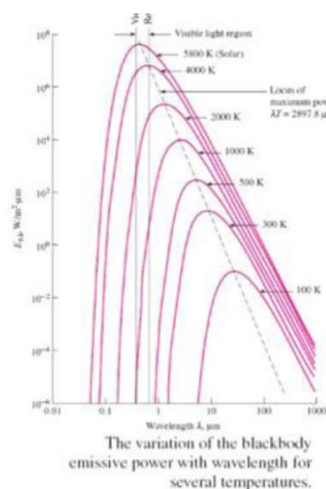
Electromagnetic waves have direct relation with speed of light and uposite relation with wave frequency

Wien's law formula :

Wien law perpose that radiation of blackbody in curve shows us that more temperature give us more peaks . At the same time the wave length have opposite relation with the temperature and less wavelength will show more temperature

Maximum wavelength = Wien's displacement constant / Temperature

Most of the visible wave are have low wavelength and at the same time high temperature



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