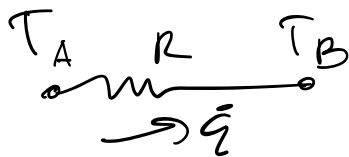a)

b) $R_{COND} = \dfrac{th}{KA_c}$, $R_{COND,C} = \dfrac{4L}{K_c A_c}$

$R_{COND,G} = \dfrac{L}{K_G A_c}$

$R_{COND,HW} = \dfrac{L}{K_{HW} A_c}$

$R_{CONV} = \dfrac{1}{h A_s}$

$R_{RAD} = \dfrac{1}{\sigma \varepsilon A_s \left(T_H^2 + T_C^2\right)\left(T_H + T_C\right)}$

$\dot{q} = \dfrac{T_A - T_B}{R}$