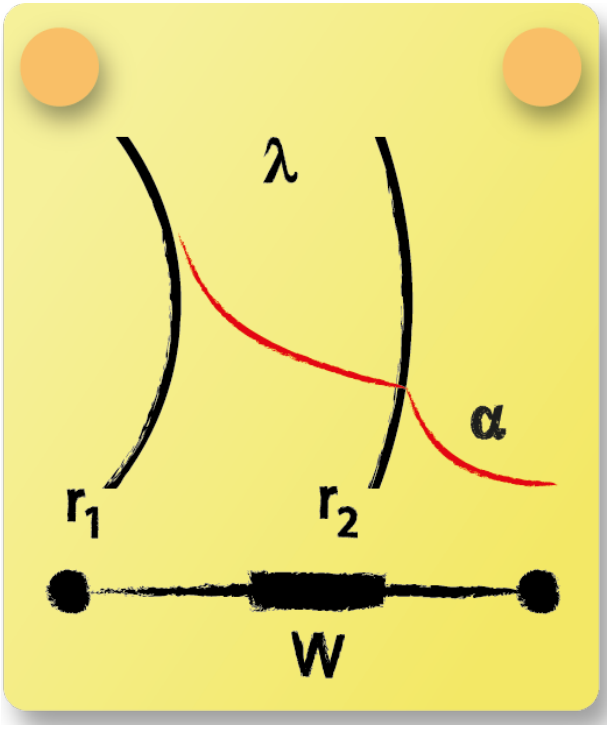
Heat Transfer Resistance: Task 5



A Pipe is given with inner and outer radius r_1 and r_2, length L and thermal conductivity λ. Convective heat transfer at the right is specified by the heat transfer coefficient α.

The overall heat transfer resistance in series is calculated as the sum of each contribution:

$$W = \sum_i W_\mathrm{i}$$

Which yields:

$$W = \frac{1}{2\pi\lambda L}\ln\frac{r_2}{r_1} + \frac{1}{2\pi r_2 L\alpha}$$