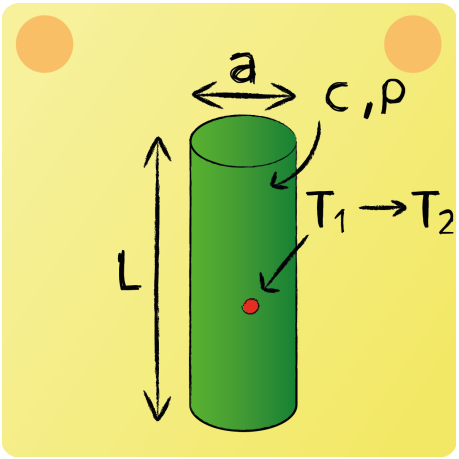
Lecture 01 - Energy 04

A cylinder cools down from T_1 to T_2. It loses an amount of Q of energy. Assume its temperature to remain homogeneous. Give an expression for T_2.



Energy balance:

$$Q = mcT_1 - mcT_2$$

$$\rightarrow T_2 = T_1 - \frac{Q}{mc}$$

Where:

$$m = \rho \cdot V = \rho \cdot \frac{1}{4}\pi a^2 L$$

So:

$$\rightarrow T_2 = T_1 - \frac{4Q}{\rho\pi a^2 Lc}$$