

Cooling Problems

$T(t)$ = Temperature of a body at time t *unit* = $^{\circ}$

$T'(t)$ = rate of change of temperature of the body at time t

$$\textit{unit} = \frac{^{\circ}}{t}$$

$H(t)$ = **rate** of increase/decrease in temperature in the body at time t due to internal sources. *unit* = $\frac{^{\circ}}{t}$

$M(t)$ = Temperature of the outside bath at time t *unit* = $^{\circ}$

k = Conductivity constant describes how a material conducts heat energy. Positive, if you heat something it doesn't get cooler. Similar to heat capacity.

*Difference between body
and bath temperature*

$$T' = k(M - T) + H$$