

Physical World 2D Report

Martin Tan (1002173), ADD AUTHORS HERE

I. DERIVATION

$$T_i - T_{amb} = -R\rho v \frac{dT}{dt}$$

$$\int_0^t dt = -R\rho v \int_{T_i}^T \frac{1}{T - T_{amb}} dT$$

$$\frac{t}{R\rho v} = \ln \left| \frac{T - T_{amb}}{T_i - T_{amb}} \right|$$

$$(T_i - T_{amb}) \exp^{-\frac{t}{\alpha}} = T - T_{amb}$$