$\frac{P}{1-\gamma}(V_2 - V_1)$ $\gamma = \frac{4}{3}$

$\frac{1-\frac{5}{3}}{}$

$\frac{R}{\gamma-1}(T_2 - T_1)$ $= \frac{1.5 \times 1.013 \times 10^5}{2}(\quad)$

$T_2 V_2^{\gamma-1} = T_1 V_1^{\gamma-1}$

$T_2 = 273.16 \times \frac{V_1^{\gamma-1}}{V_1^{\gamma-1}} = 273.16 \times 2^{\frac{5}{3}-1} = 2^{2/3} \times 273.16$

$\frac{T}{2^{\gamma-1}}$ $T_2 = 433.6$ 426.2

$= \frac{8.31 \times 3}{2}(433.6 - 273.16)$

$m = 1\,gm$, $T = 300K$, $V_1 = V$, $V_2 = 2V$

$\frac{T_2}{V_2} = \frac{T_1}{V_1}$

$\frac{2T_1}{T_1} = \frac{V_2}{V_1}$

$V_2 = V_3$

$T = 300K$

$\Delta Q \neq 0$

$\Delta T = 0 \rightarrow$ isothermal.

$\Delta Q = 0$

$\frac{Q}{1-\gamma}(\Delta T)$

$T_1 V_1^{\gamma-1} = T_2 V_2^{\gamma-1}$

$\frac{T_2}{T_1} = 3^{\gamma-1}\frac{V_1^{\gamma-1}}{V_1^{\gamma-1}}$ $\Rightarrow T_2 = T_1 3^{\gamma-1}$

$300(3^{\gamma-1} - 1)$