

26.) $W_g = 200 \text{ J}$ $p = \text{all}$ $\kappa = 1,4$ $Q = ?$

$$\begin{aligned} W &= -p \Delta V \\ W_g &= -W \\ p &= \text{all} \end{aligned}$$

$$\begin{aligned} E_b &= \frac{f}{2} n R T = \frac{f}{2} p V \\ p V &= n R T \end{aligned}$$

$$\kappa = \frac{c_p}{c_v} = \frac{\frac{f}{2} + 1}{\frac{f}{2}}$$

$$\Delta E_b = Q + W$$

$$\kappa = \frac{\frac{f}{2} + 1}{\frac{f}{2}} \rightarrow f = 5$$

$$p V = n R T$$

$$W_g = p \Delta V = n R \Delta T = 200 \text{ J}$$

$$\Delta E_b = Q - W_g$$

$$\frac{f}{2} n R \Delta T = Q - W_g$$

$$\frac{f}{2} W_g + W_g = Q$$

$$\left(\frac{f}{2} + 1 \right) W_g = Q = \left(\frac{5}{2} + 1 \right) 200 \text{ J} = \underline{\underline{700 \text{ J}}}$$