

Subiectul B. ELEMENTE DE TERMODINAMICĂ

III.a.	$C_V = \frac{R}{\gamma-1} = \frac{3}{2} \cdot R$ $U_3 = \nu \cdot C_V \cdot T_3$ $U_3 = \frac{3}{2} \cdot p_3 \cdot V_3 = 3 \cdot \nu \cdot R \cdot T_1$ <p>Rezultat final: $U_3 = 7479 \text{ J}$</p>
b.	$C_{12} = \frac{Q_{12}}{\nu(T_2 - T_1)}$ $Q_{12} = \Delta U_{12} + L_{12}$ $C_{12} = C_V + \frac{3 \cdot p \cdot V}{2 \cdot \nu \cdot (T_2 - T_1)} = C_V + \frac{3 \cdot p \cdot V}{2 \cdot \left(\frac{p_2 \cdot V_2}{R} - \frac{p_1 \cdot V_1}{R} \right)}$ <p>Rezultat final: $C_{12} = 2 \cdot R = 16,62 \text{ J/mol} \cdot \text{K}$</p>
c.	$Q_{ced} = Q_{23} + Q_{31}$ $Q_{23} = \nu \cdot C_V \cdot (T_3 - T_2) = -3 \cdot p \cdot V$ $Q_{31} = \nu \cdot C_p \cdot (T_1 - T_3) = -\frac{5}{2} \cdot p \cdot V$ $Q_{ced} = -\frac{11}{2} \cdot p \cdot V = -\frac{11}{2} \cdot \nu \cdot R \cdot T_1$ <p>Rezultat final: $Q_{ced} = -13711,5 \text{ J}$</p>
d.	$L = \frac{(p_2 - p_1) \cdot (V_3 - V_1)}{2} = \frac{\nu \cdot R \cdot T_1}{2}$ $Q_{abs} = L + Q_{ced} $ <p>Rezultat final: $\frac{L}{Q_{abs}} = \frac{1}{12}$</p>
