

Write down the definitions and consequences of the following thermodynamic processes:

1. reversible:  $\delta W = ?$ ,  $\delta Q = ?$

2. adiabatic:  $\delta Q = ?$

3. isentropic = ?

- $P^a V^b = \text{constant} \Rightarrow a = ?, b = ?$

4. free expansion:  $f(P, V) = g(P', V') = ?$