



DPP-7 [Graph and Comparison]

Dreams don't work unless you do—so pick up the pen like a kunai.

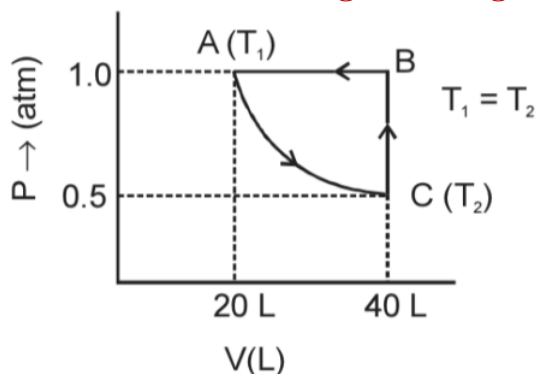
1. Which statement is true for reversible process:

- | | |
|---|------------------------------|
| (1) It takes place in single step | (3) Work obtained is minimum |
| (2) Driving force is much greater than opposing force | (4) None |

2. The incorrect statement is:

- | | |
|---|---|
| (1) $W_{rev} > W_{irr}$ in isothermal process | (4) Work and heat appear only at the boundary of the system |
| (2) $\Delta U = W_{adiabatic}$ | |
| (3) $q = 0$ for cyclic process | |

3. Two moles of an ideal gas undergoes following process as shown:



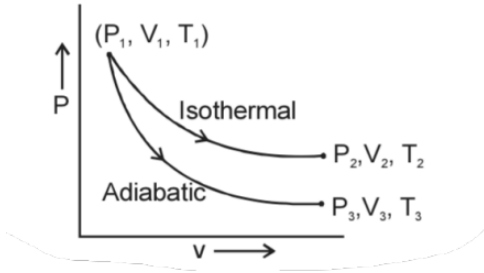
Correct among the following is/are:

- | | |
|-------------------------------|------------------------|
| (1) $\Delta U = \Delta S = 0$ | (3) $W_{cycle} \neq 0$ |
| (2) $W_{BC} = 0$ | (4) All of these |

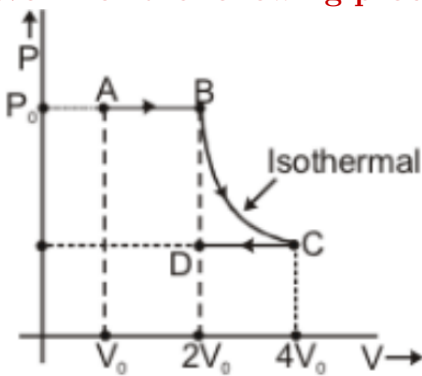
4. For the expansion occurring from initial to final stage in finite time, which is incorrect?

- | | |
|--|--------------------|
| (1) Equilibrium exist in initial and final stage | force |
| (2) Work obtained is maximum | (4) Both (1) & (2) |
| (3) Driving force is much greater than opposing | |

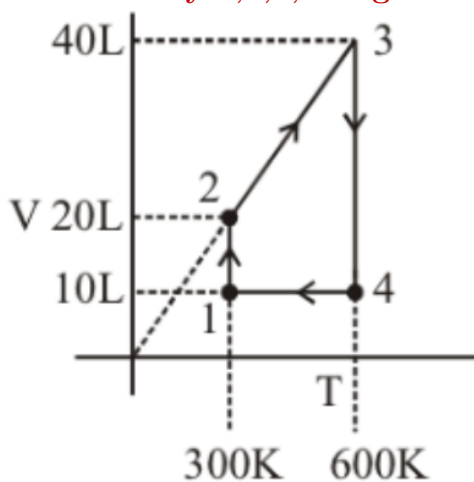
5. Expansion of an ideal gas under isothermal and adiabatic condition is given below. Incorrect statements is:



- (1) $W_{isothermal} > W_{adiabatic}$ (3) $T_1 = T_2 = T_3$
 (2) Ratio of slope of adiabatic to isothermal will be γ (4) $\Delta U_{isothermal} > \Delta U_{adiabatic}$
6. Work for the following process ABCD on a monoatomic gas is:



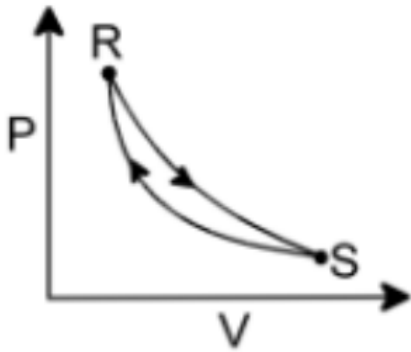
- (1) $w = -2P_0V_0 \ln 2$ (3) $w = -P_0V_0(1 + \ln 2)$
 (2) $w = +2P_0V_0 \ln 2$ (4) $w = -P_0V_0 \ln 2$
7. What is the net work done when 1 mole of monoatomic ideal gas undergoes in a process described by 1,2,3,4 in given V-T graph.



(Use $R = 2 \text{ cal/mole K}$, $\ln 2 = 0.7$)

- (1) -600 cal (3) $+660 \text{ cal}$
 (2) -660 cal (4) $+600 \text{ cal}$

8. Consider the cyclic process $R \rightarrow S \rightarrow R$ as shown in the Fig. You are told that one of the path is adiabatic and the other one is isothermal. Which one of the following is true?



- (1) Process $R \rightarrow S$ is isothermal
(2) Process $S \rightarrow R$ is adiabatic
(3) Process $R \rightarrow S$ is adiabatic
(4) Such a graph is not possible
9. If W_1 , W_2 & W_3 are magnitude of work done of an ideal gas in isothermal, adiabatic & isobaric reversible expansion process from same initial stage to same final volume. Then correct order will be:

- (1) $W_3 > W_1 > W_2$
(2) $W_3 > W_2 > W_1$
(3) $W_2 > W_1 > W_3$
(4) $W_1 > W_2 > W_3$