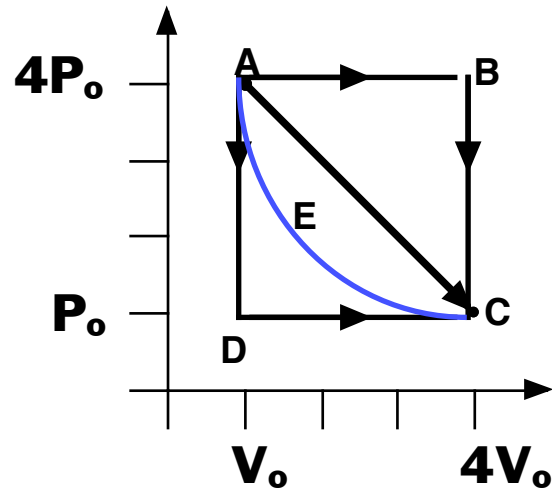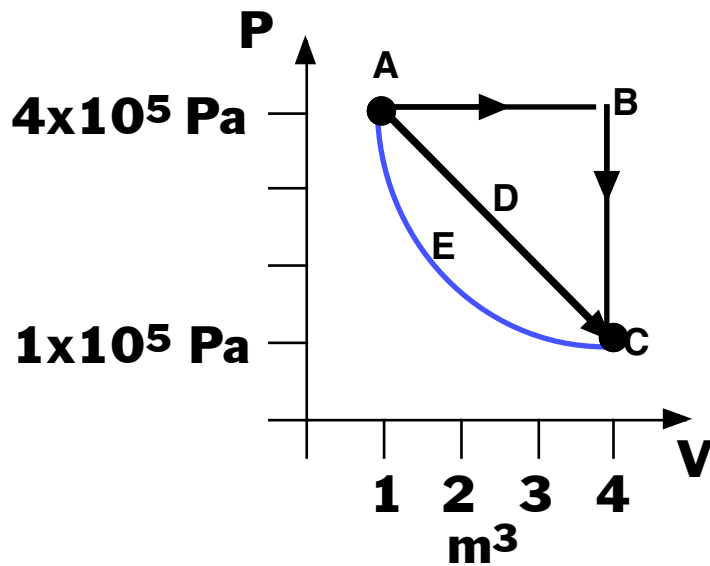# PV Diagram Worksheet
Show your work on a separate piece of paper.

1. Which process(es) shows a ΔQ equal to $5/2nR\Delta T$?

2. Which process(es) show a $W=0$?

3. Which process shows a decrease in temperature?

$4P_o$ ... P_o ... V_o ... $4V_o$

(Diagram with points A, B, C, D, E)

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4. For the graph to the right, assuming no molecules are allowed to escape, show that states A and C are at the same temperature.?

5. How much work is done along the path from A to B?

6. How much thermal energy is added from state A to B is this represents 3 moles of an ideal gas?

7. How much work is done from states B to C?

4×10^5 Pa ... 1×10^5 Pa

$1 \quad 2 \quad 3 \quad 4$
m^3

(Diagram with points A, B, C, D, E)

8. Is positive work done **on** the surroundings or **by** the surroundings as the system under goes a change along A → D → C?

PV Diagram Worksheet

Show your work on a separate piece of paper.

9. Assuming the molecules cannot escape the system. Rank the internal energy from highest to lowest.

10. Rank the six points according to their temperatures from highest to lowest.

11. There are two possible paths between state F and C. They are F→A→B→C or F→E→D→C. Consider the process of, F→A, B→C, F→E, D→C: Which process shows the greatest amount of heat flowing into the system and least amount of heat flowing into the system?
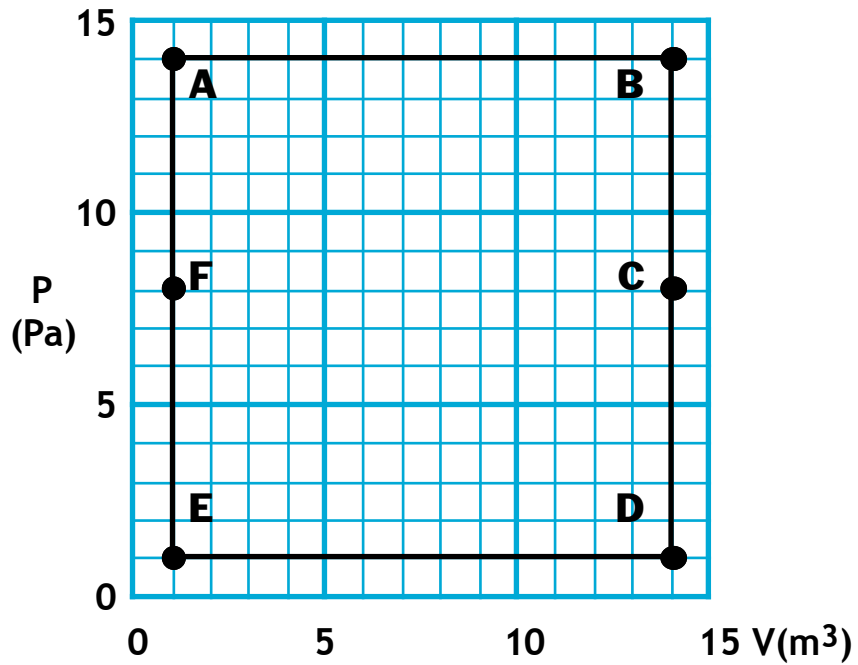
12. How much thermal energy flows from the system from D→E?

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13. How much work is done by the surroundings from C→A?

14. How much work is done by the gas in the system from A→B?

15. How much work is done by the surroundings in the cycle A→B→C?

16. Does thermal energy flow into or out of the system during the cycle, A→B→C?

17. In the process from A→B, how much thermal energy flows from the environment?