

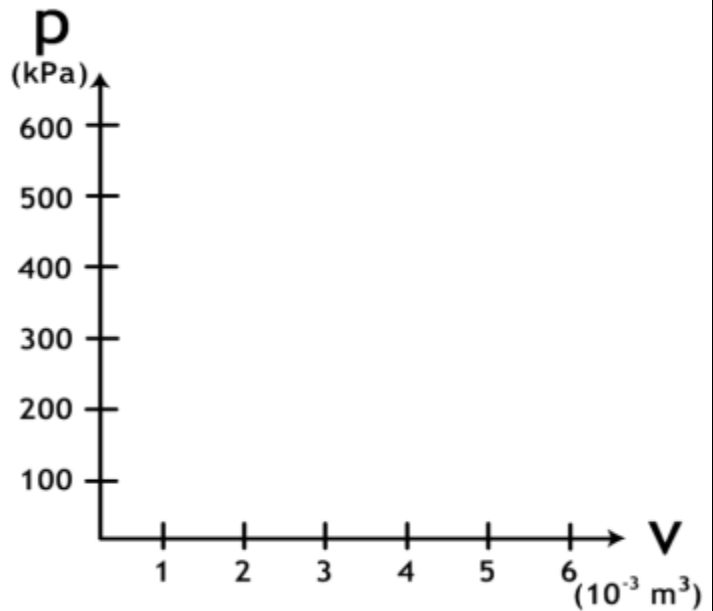
THERMO PROCESS EXAMPLE #1

A gas undergoes the following processes during a thermodynamic cycle.

- Starts at A at $2 \times 10^{-3} \text{ m}^3$ and 400 kPa at 800 K
- Goes to B by isobaric process to $4 \times 10^{-3} \text{ m}^3$.
- Goes to C by isochoric process to 200 kPa.
- Returns to A by Isothermal process.

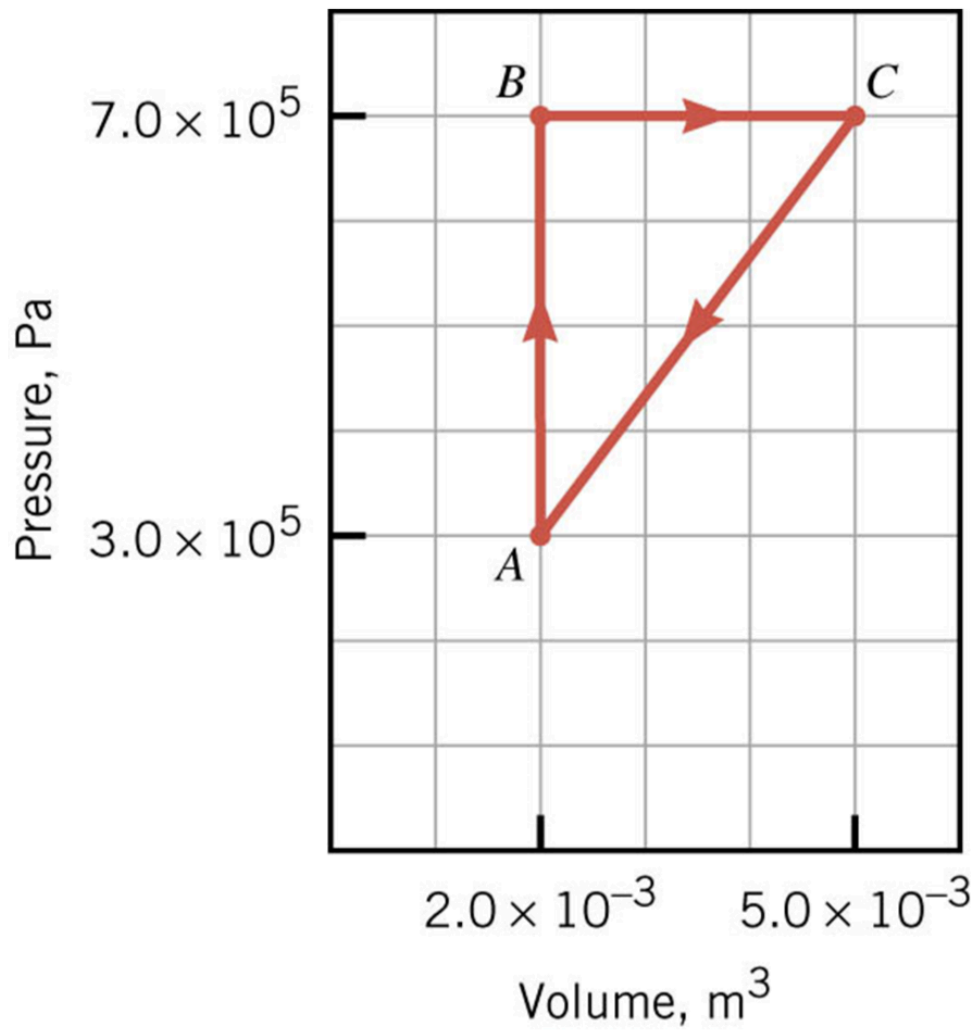
Sketch the process on the graph to the right, labeling each state and including arrows representing the direction of each process.

For each process determine the following:



	A → B	B → C	C → A	WHOLE CYCLE
Is it a compression or expansion?				
Did the temp change?				
What is the final temperature?				
Did the internal energy change?				
Estimate the amount of internal energy change				
Was work done?				
Estimate the amount of work done				
Was heat added or removed?				
Estimate the amount of heat added or removed				

THERMO PROCESS EXAMPLE #2

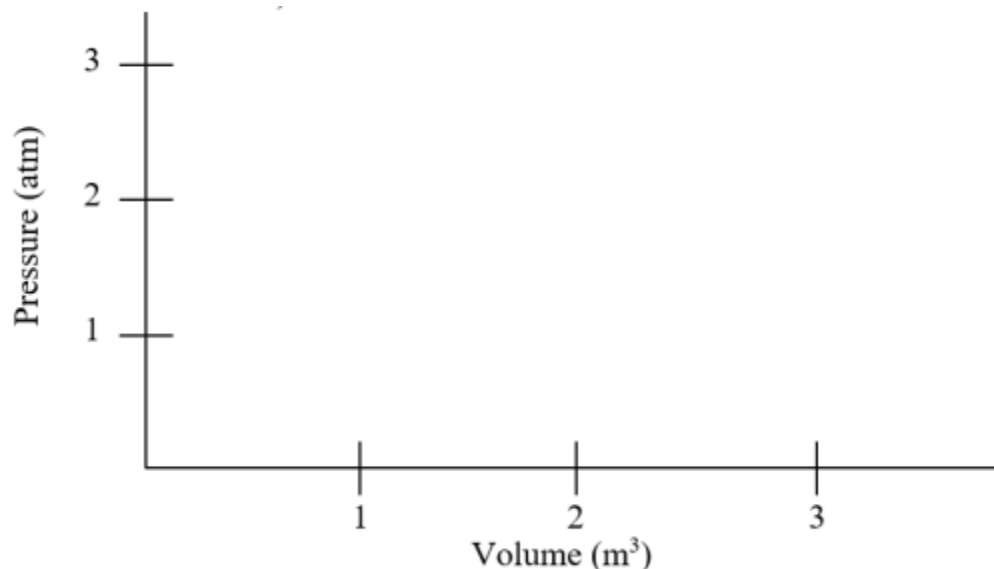


COMPLETE THE TABLE BELOW FOR THE PROCESS ABOVE

	SPECIAL PROCESS	Q (J)	W (J)	ΔU (J)
A → B				
B → C				
C → A				
TOTAL				

THERMO PROCESS EXAMPLE #3

A mole of an ideal gas starts at $\frac{1}{2}$ atmosphere and 1.00 m^3 (Point A). The gas pressure increases by 2.5 atm due to an isochoric process (to POINT B). The gas then expands under a linear process to a volume of 3.0 m^3 and its original pressure (POINT C). Finally the gas contracts under an isobaric process back to its original volume (BACK TO POINT A). Sketch the process Labeling A, B, C and fill in the Tables below.



Point	P (kPa)	V (m ³)	T (K)	U (kJ)
A				
B				
C				

Step	ΔU (kJ)	Q (kJ)	W (kJ)
A \rightarrow B			
B \rightarrow C			
C \rightarrow A			
CYCLE			