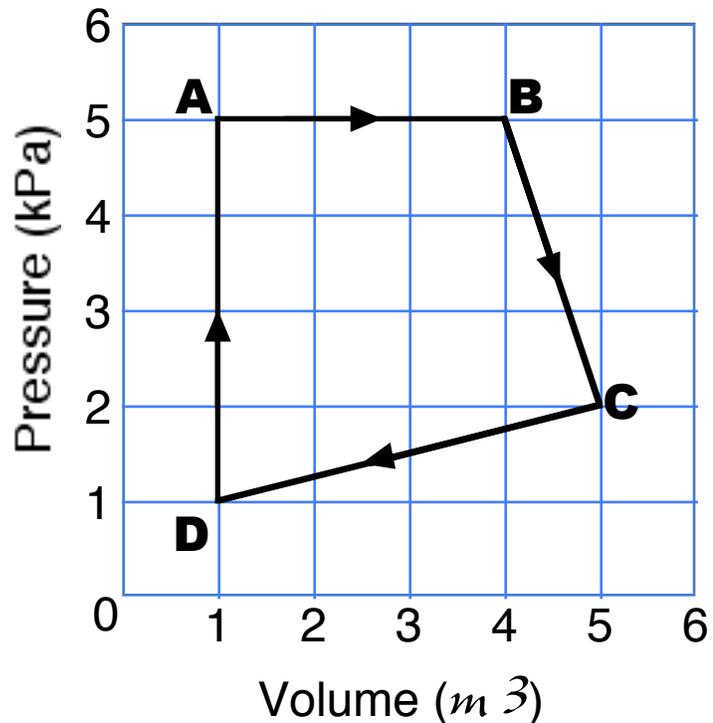


Thermodynamic Cycle: Class Example Problems

To the right is a P-V diagram that shows multiple step thermodynamic cycle.

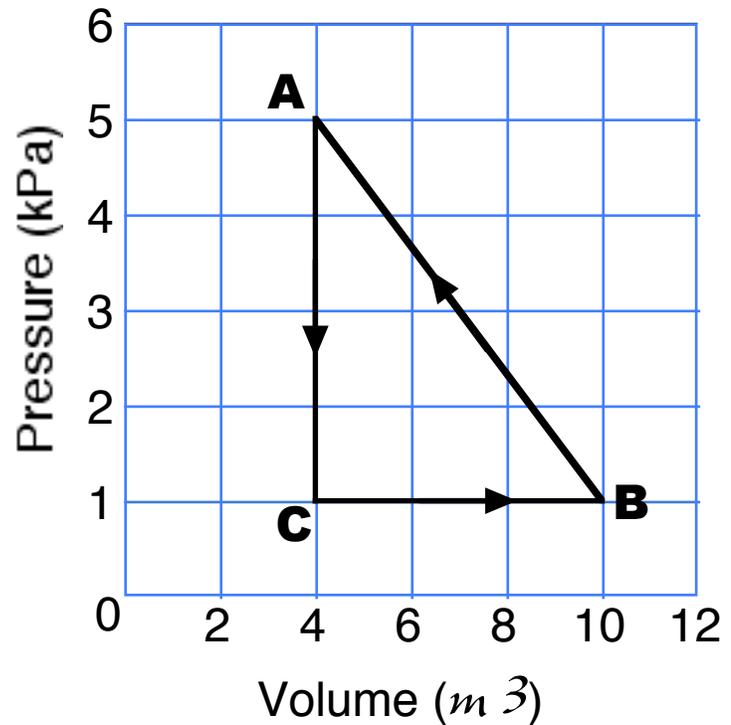


1. What is the name of the thermal dynamic process as the gas goes from point "A" to point "B"?
2. What is the name of the thermal dynamic process as the gas goes from point "D" to point "A"?
3. How much work is done as a gas undergoes a change along the curve from point "B" to "C"?
4. How much work is done as a gas undergoes a change along the curve from point "C" to "D"?
5. How much *NET* work is done on or by the gas as it undergoes a change along the curve from point "A" to "B" to "C" to "D" and back to "A"?
6. If the PV diagram above is for 2 moles of a gas then what is the gas's temperature at point "A"?
7. If the PV diagram above is for 2 moles of a gas then what is the gas's temperature at point "D"?
8. If the PV diagram above is for 2 moles of a gas then what is the change in internal energy of the gas during the process from "D" to "A"?
9. How much thermal energy is added to the gas as it undergoes a change from point "D" to "A"?
10. How much work is done either on or by the system during the process from "D" to "A"?
11. How much work is done either on or by the surroundings from the process from "B" to "C"?
12. How much work is done either on or by the surroundings during the cycle from A to B to C to D?
13. If 15 kJ of thermal energy is entered into the system shown from the P-V diagram, then what is the change in internal energy?

Thermodynamic Cycle: Class Example Problems

To the right is a P-V diagram that shows a thermal dynamic cycle.

14. What is the name of the thermal dynamic process as the gas goes from point "B" to point "C"?
15. What is the name of the thermal dynamic process as the gas goes from point "C" to point "A"?
16. How much *NET* work is done as a goes undergoes a change along the curve from point "A" to "B" to "C" to "A" again?
17. If 20 kJ of thermal energy is entered into the system shown from the P-V diagram, then what is the change in internal energy of the cycle?



18. If this process occurs to a system containing 4 moles of gas then what is the temperature at location "B"?
19. If this process occurs to a system containing 4 moles of gas then what is the change in internal energy during the process from "A" to "C"?
20. How much work is done by the system during the process from "C" to "B"?
21. How much work is done by the surroundings during the process from "B" to "A"?
22. How much thermal energy is added or removed to/from the system from "C" to "B," if this process occurs to a system containing 4 moles of gas?
- 23.