Thermodynamics: Laws

⚠ This is a preview of the draft version of the quiz

Started: Nov 4 at 9:59am

Quiz Instructions

Question 1	1 pts

Which of the following are correctly paired?

○ isobaric | temperature

○ isochoric | temperature

○ isochoric | volume

○ isobaric | volume

Question 2	1 pts

Which of the following are indications that work has been done on the system? (Choose 2)

☐ There is a decrease in the average kinetic energy of the gas molecules.

☐ The sign for work is positive.

☐ The sign for heat is negative.

☐ The sign for work is negative.

☐ There is an increase in the total internal energy of the system.

Question 3
1 pts

On a PV diagram, a line with a slope of 0 would represent which type of thermodynamic process?

☐ isochoric

☐ isothermic

☐ isobaric

☐ isometric

Question 4
1 pts

What does the area under the curve represent on a PV diagram?

☐ temperature

☐ total volume

☐ change in pressure

☐ work

Question 5   **1 pts**

When you're told that 3000 J of heat is added to a thermodynamic system, which variable does that quantity represent?

○ T

○ W

○ Q

○ U

Question 6   **1 pts**

Which variable represents the sum of the heat and work for a thermodynamic system?

○ U

○ Q

○ W

○ T

Question 7

1 pts

Which of the following is correct about an isothermal system where W=+20J?

○ 20J of work was done by the system and 20J of heat was removed from the system

○ 20J of work was done on the system and 20J of heat was added to the system

○ 20J of work was done on the system and 20J of heat was removed from the system

○ 20J of work was done by the system and 20J of heat was added to the system

Question 8

1 pts

60J of heat are added to a system. If the internal energy increases by 75J, how much work is done on the system?

○ 15J

○ 0J

○ −15J

○ 5J

Question 9

1 pts

Which of the following are true?

☐ A decrease in volume implies work done on the system.

☐ An increase in volume implies work done on the system.

☐ An increase in volume implies work done by the system.
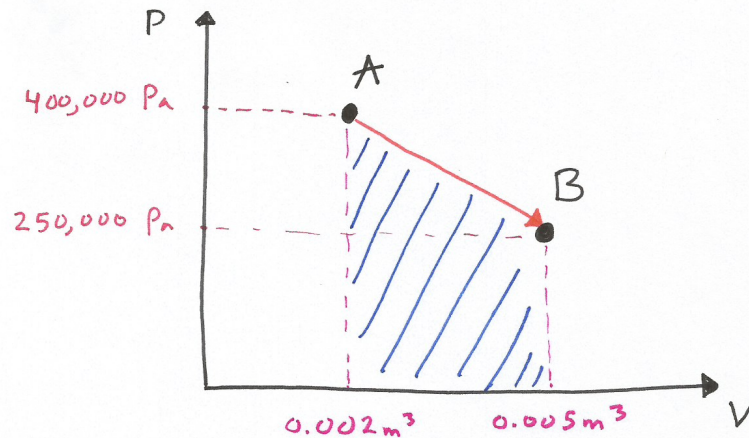
☐ A decrease in volume implies work done by the system.

Question 10

1 pts

A 1.4 mol sample of gas is taken from 0.001 m^3 to 0.005 m^3 at 450,000 Pa while 2,500 J of thermal energy is added. What is the change in internal energy U in J?
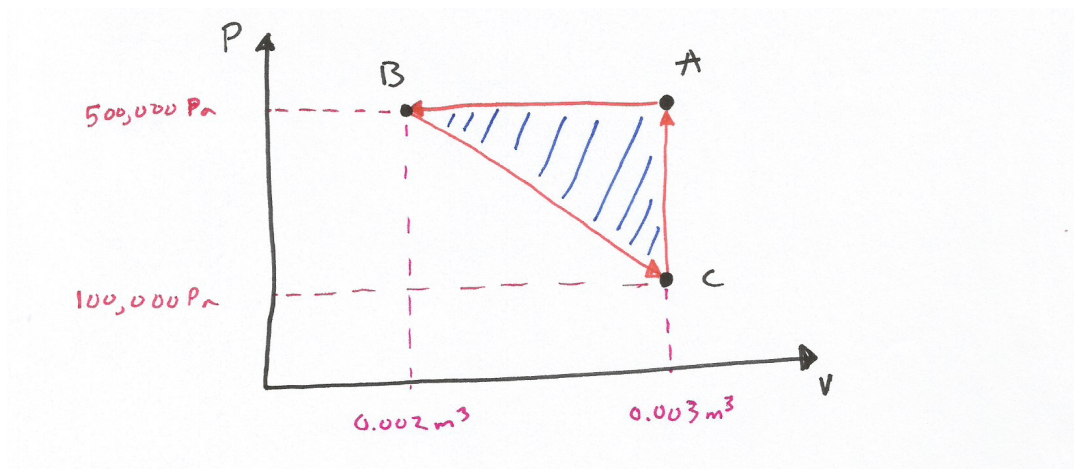
☐ 800

☐ 700

☐ 500

☐ 600

Question 11   1 pts

Given the PV diagram below, how much work is done in J on the gas to go from Point A to B?

- [ ] -475

- [ ] -1000

- [ ] -500

- [ ] -975

Question 12   1 pts

Given the PV diagram below, how much work in J is done on the gas to go from Point A to B to C and back to A?

- [ ] 50
- [ ] 300
- [ ] 175
- [ ] 200

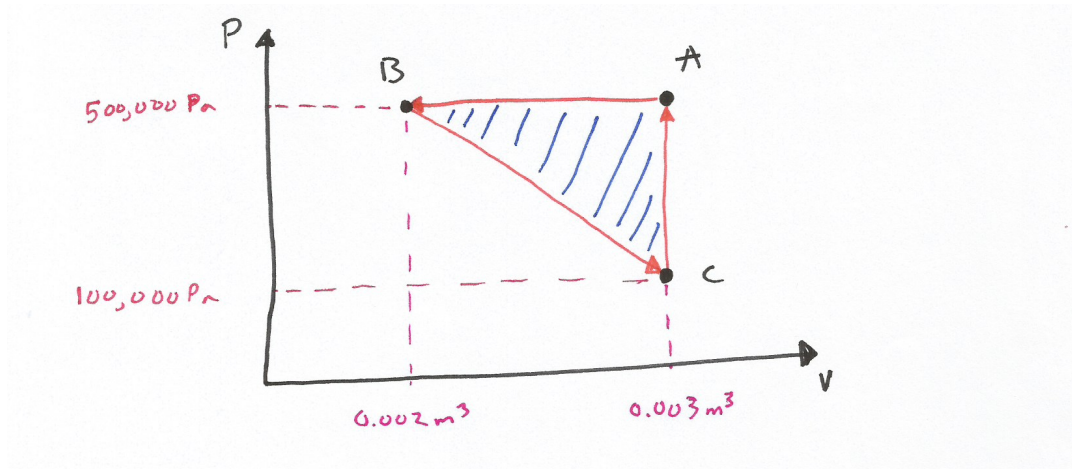---

Question 13   1 pts

What is the change in temperature in K from point B to point C? Assume 3 moles of an ideal gas.

- [ ] -82.1

- [ ] -76.8

- [ ] -24.3

- [ ] -28.1

Question 14   1 pts

If a 4 mol system increases in internal energy by 20,000 J with an initial pressure and volume of 220 kPa and 0.050 m^3 and 10,000 J of heat is also added, what is the final volume in m^3 of the isobaric system?

- [ ] .0035

- [ ] .0045

- [ ] .0025

☐ .0004

Question 15

1 pts

If a 16 mol system decreases in internal energy by 12,000 J with an initial pressure and volume of 110 kPa and 0.25 m^3 and 7,000 J of heat is also added, what is the final volume in m^3 of the isobaric system?

☐ .499

☐ .454

☐ ,423

☐ .091

Not saved   Submit Quiz