

Chapter 7 Question #1

Which of the following state transitions (from 1-2) are consistent with the First Law of Thermodynamics?

- A. **State 1:** Two identical blocks of copper are put in contact. One is at 200K the other is at 300K. The two (together) are thermally-insulated from the environment. **State 2:** Blocks of copper now at $T=250\text{K}$.
- B. **State 1:** A flywheel is spinning in air in a thermally-insulated rigid container. The flywheel and air are at the same temperature. **State 2:** The flywheel has stopped and the air temperature is higher.
- C. **State 1:** Gas X fills half of a rigid container and another gas Y occupies the other half. The temperature is T . **State 2:** The gases are uniformly mixed throughout the container and the temperature is T .

- 1) A 2) B 3) C 4) All of them 5) None of them
6) I am not sure

Chapter 7 Question 1 Answer:

(4) All of them