# Chapter 7 Question #3

**Which of the following reverse state transitions (from 2-1) do you think are possible?**

**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=250K.**

**B. State 1: A flywheel is spinning in air in a thermally-insulated rigid container. The flywheel and air at 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**

LO#5

**Chapter 7 Question 3 Answer:**

**(4) All of them**

This is a bit of a trick question. All the reverse processes are possible, but not spontaneously (i.e. work has to be applied to make them happen). The measure of whether or not a process is reversible is if both the system and the surroundings return to the original state after the forward and reverse process are completed. For these processes it is possible to put the system back to its original state, but it would require the surroundings to give up work.