

**THE MECHANICAL UNIVERSE**

**Video 47 - Entropy**

**Name:** \_\_\_\_\_

**Class:** \_\_\_\_\_

1. Briefly state the 4 laws of thermodynamics:
  
2. Is thermal equilibrium easy or hard to find in the real world?
  
3. Which direction does heat flow?
  
4. The existence of any engine works on what principle?
  
5. As a falling body bounces, where does all the energy of motion eventually go?
  
6. What is the name of the most efficient engine possible?
  
7. In addition to conserving energy, what else is conserved in an ideal engine?
  
8. The state of equilibrium is also the state of maximum \_\_\_\_\_.
  
9. Is water at a higher or lower state of entropy compared to ice?
  
10. Explain what is meant by the "heat death" of the universe?
  
11. Explain how entropy defines the flow of time itself: