**Chapter 10 Study Guide**

1. A room has a temperature of 68o F. What is this temperature in degrees Celsius?

2. The temperature on a summer day is 30o C. This is equal to \_\_\_\_\_\_\_ oF.

3. Express the 30o C temperature in the previous problem in Kelvin.

4. How much heat is required to raise the temperature of 60 grams of water from 25o C to 85o C?

5. How much heat must be added to 300 grams of water at 100o C to convert it to steam at 100oC?

6. Express 500 calories as its equivalent in Joules.

7. Work of 2000 J is done on an ideal gas which experiences an internal energy increase of 800 J. Calculate the heat transferred during this process and indicate whether heat was added to or removed from the gas.

8. The volume of a gas is increased from 2.0 m3 to 5.0 m3 while a constant pressure of 1500 Pa (1500 N / m2) is maintained. Calculate the work done, and specify whether work was done on or by the gas.

9. The internal energy of a system is increased by 600 J while the system does work of 700 J. How much heat was transferred to the system? Was the heat transferred into or out of the system?

10. A container of an ideal gas initially has a volume of 2.0 m3 and a pressure of 1000 Pa (1000 N / m2). The pressure is changed to 3000 N / m2while the temperature remains constant. Find the new volume of the gas.