Name _____ Date _____ Hour _____

Gas Laws – Mixed Practice

1. Make the following conversions. Show work.

   a. 165 kpa to atmospheres

   b. 6.41 atm to kilopascals

   c. -50°C to Kelvin

   d. 500 K to °C

2. A sample of carbon dioxide occupies a volume of 3.50 L at 125 kPa. What pressure would the gas exert if the volume was decreased to 2.00 L?

3. Oxygen gas is at a temperature of 40°C when it occupies a volume of 2.3 L. To what temperature should it be raised to occupy a volume of 6.5 L?

4. A steel container has an initial pressure of 1.50 atm at 21°C. What will be the pressure if the temperature of the container is raised to 121°C?

5. Hydrogen gas was cooled from 150°C to 50°C. If its new volume is 75 mL, what was its original volume?

6. A 2.0 L container of nitrogen gas had a pressure of 3.2 atm. What volume would be necessary to decrease the pressure to 1.0 atm?

7. The pressure inside a container is 102.6 kPa at a temperature of 57°C. What would the pressure be at 75°C?

8. A sample of neon at 50°C in a 2.5 L balloon is cooled to 25°C. What is the new volume of the balloon?

9. A steel container is at a temperature of 112°C. When it is heated to 224°C, the pressure was 288 kPa. What was the initial pressure in the container?

10. Batman notices that one of the tires on the Batmobile is low on a morning when the temperature in the Batcave is -8°C. He determines the volume of the tire to be 15 L. Yesterday afternoon, however, when Robin bought that tire new, the tire was inflated properly to a volume of 20 L. What was the temperature yesterday when Robin bought the tire?