Name: Date: Period:

Practice: Combined Gas Law

1. A gas initially has a pressure of 12 atm, a volume of 23 liters, and a temperature of 200K. If the pressure is raised to 14 atm and the temperature is increased to 27 ºC, what is the new volume of the gas?
2. A gas takes up a volume of 17 L, has a pressure of 2.3 atm, and a temperature of 299 K. If the temperature is raised to 350 K and the volume is lowered to 1.5 L, what is the new pressure of the gas?
3. A gas has a volume of 28 L, a temperature of 45 ºC, and an unknown pressure. When the volume is increased to 34 L and the temperature is decreased to 35 ºC, the resulting pressure is 2.0 atm. What was the initial pressure of the gas?
4. A gas has a temperature of 14 ºC and a volume of 4.5 L. If the temperature is raised to 29 ºC, what is the new volume of the gas?
5. If I have 17 L of gas at a temperature of 67 ºC and a pressure of 88.89 atm, what will the pressure of the gas be if the temperature is raised to 94 ºC and the volume is decreased to 12 L?
6. I have an unknown volume of gas at a pressure of 0.5 atm and a temperature of 325 K. If the pressure is raised to 1.2 atm and the temperature is decreased to 320 K, the resulting volume is 48 K. What was the initial volume of the gas?
7. If I have 21 L of gas held at a pressure of 78 atm and a temperature of 527 ºC, what will the volume of the gas be if the pressure is decreased to 35 atm and the temperature is changed to 750 K?
8. I have 2.9 L of gas at a pressure of 5 atm and a temperature of 50 ºC. What will the new temperature of the gas be if the volume of the gas is decreased to 2.4 L and the pressure is decreased to 3 atm? Give your answer in both K and ºC.