

Name: _____

Period: _____

Date: _____

CHAPTER 10 NOTES

10.3: The Gas Laws: Part 2

Gay-Lussac's Law

1. Knowing both Boyle and Charles's Laws, describe the relationship between pressure and temperature (include whether this is a direct or indirect proportionality).
2. Think of a situation in "real life" that exemplifies Gay-Lussac's Law and explain it below.
3. Define Gay-Lussac's Law in words.
4. Write the equation for Gay-Lussac's Law (use the one that compares changing conditions for a gas at the top of page 320).
5. **Example Problem:** A sample of helium gas has a pressure of 1.20 atm at 22 °C. At what Celsius temperature will the helium reach a pressure of 2.00 atm? (refer to sample problem 10-4) in the book on pg 320)

The Combined Gas Law

6. Define and write the equation for Combined Gas Law (use the one second from the top on page 321).
7. Explain how each of the individual gas laws can be obtained from the combined gas law.
8. **Example Problem:** The volume of a gas is 27.5 mL at 22.0 °C and 0.974 atm. What will the volume be at 15.0 °C and 0.993 atm? (refer to sample problem 10-5) in the book on pg 321)

Law of Partial Pressures

9. Describe what John Dalton found when he studied gas mixtures.

10. Define “partial pressure”:

11. Describe Dalton’s law of partial pressures **in words and in an equation**:

12. How does the kinetic-molecular theory support the law of partial pressures?

13. When water displacement is used to collect gases, **what equation** describes how Dalton’s law of partial pressures applies?

14. **Example Problem:** Helium gas is collected over water at 25 °C. What is the partial pressure of helium, given that barometric pressure is 750.0 mm Hg? (refer to sample problem 10-6) in the book on pg 324-5)