Unit 8: Ch 14 – Gas Laws Pt 1: Avogadro's/Boyle's/Charles's/Gay-Lussac's

GAS BEHAVIOR REVIEW:

- Gases behave ***differently*** based on conditions of _____, _____, _____, and _____ *(moles)* of gas.

GAS LAWS PT 1:

- **#1) AVOGADRO'S LAW:**
  - Under ***equal*** conditions of ***STANDARD*** _____ and _____:
    - ***Equal*** _____ of gases (_____) contain ***equal*** _____.
    - **FORMULA:**

- **#2) BOYLE'S LAW:**
  - _____ of gas varies _____ with applied _____.
    - _____ - Kept _____.
    - _____ pressure = _____ volume
    - **FORMULA:**
  - Ex #1) Chlorine gas occupies 946 mL at 726 mmHg. What is the pressure of chlorine gas if it is reduced to 154 mL?

- **#3) CHARLES'S LAW:**
  - _____ of gas varies _____ to _____ temperature.
    - ***Temperature Conversion:*** _____
    - _____ - Kept _____.

- _____ temperature = _____ volume
- **FORMULA:**

- Ex #2) Carbon monoxide gas occupies 3.20 L at 125 ˚C. At what temperature will the gas occupy 1.54 L?

- **#4) GAY-LUSSAC'S LAW:**
  - _____ of gas varies _____ to _____ temperature.
    - _____ - Kept _____.
    - _____ temperature = _____ pressure
    - **FORMULA:**

  - Ex #3) Pressure of gas inside a tank is 3.20 atm at 22.0 ˚C. If the temperature rises to 60.0 ˚C, what will be the gas pressure inside the tank?

MIXED PRACTICE:

1) A sample of gas inside a sealed container has a pressure of 125 kPa at 30.0 ˚C. If the pressure increases to 201 kPa, what is the new temperature?

2) A helium gas balloon is compressed from 4.00 L to 2.50 L at constant temperature. If the pressure in the 4.00 L is 210 kPa, what is the pressure at 2.50 L?

3) A sample of gas at 40.0 ˚C occupies 2.32 L. If the temperature is raised to 75.0 ˚C, what will be the volume, assuming pressure remains constant?