

## Ch. 13.1 & 14 Review Game Problems

### 1) Pressure

What is the atmospheric pressure, in kPa, when the pressure is sufficient to support 731.2 mm Hg?

### 2) Partial Pressure

What is the total pressure of a mixture of gases with  $P_{\text{He}} = 128$  mm Hg,  $P_{\text{Ar}} = 421$  mm Hg and  $P_{\text{Ne}} = 389$  mm Hg?

### 3) Boyle's Law

A sample of  $\text{CO}_2$  gas occupies a volume of 345 mL at 94.8 kPa. At what pressure will its volume be 142 mL?

### 4) Charles's Law

A balloon full of air has a volume of 8.39 L at  $38.0^\circ\text{C}$ . At what T in  $^\circ\text{C}$  is its volume 3.78 L?

### 5) Gay-Lussac's Law

A lab vessel of Kr gas has a pressure of 83.4 kPa at  $-45^\circ\text{C}$ . What will its pressure be at  $43^\circ\text{C}$ ?

### 6) Combined Gas Law

A piston of  $\text{N}_2$  gas has a volume of 3.50 L at 1.15 atm and  $29.0^\circ\text{C}$ . What is its pressure when compressed to 1.29 L at  $56.0^\circ\text{C}$ ?

### 7) Avogadro's Principle

What is the mass of 32.8 L of Xe at STP?

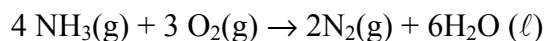
8) Ideal Gas Law

What is the volume of 66.8 g NO<sub>2</sub> at 855 torr and 15°C?

9) Molar Mass Calculations

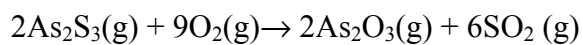
What is the molar mass of a gas with density = 1.91 g/L at a pressure of 0.572 atm and -14°C?

10) Volume-Volume Calculations



How many L of NH<sub>3</sub> are needed to produce 18.6 L N<sub>2</sub> at the same T & P?

11) Mass-Volume Calculations



What is the theoretical yield of As<sub>2</sub>O<sub>3</sub> for 29.3 L O<sub>2</sub>, at STP, reacting with excess As<sub>2</sub>S<sub>3</sub>?