

Name _____

Chapters 10 and 11 Homework Ver B

1. Which of the following is the correct Lewis Structure for CS₂?
 - a. Si and Cl
 - b. Na and F
 - c. C and S
 - d. C and Cl
 - e. O and O

2. Classify a bond between each of the following as nonpolar, polar or ionic.
 - a. Si and Cl
 - b. Na and F
 - c. C and S
 - d. C and Cl
 - e. O and O

3. Complete the following table:

Molecule	Valence electrons total number	Lewis Structure	Electron Domain Geometry	Molecular Geometry	Polar or Nonpolar Molecule Overall?
CH ₃ F Fluoromethane					
PCl ₃ Phosphorous trichloride					
SO ₃ Sulfur trioxide					
NO ₂ ⁻¹ Nitrite ion					

SF ₂ Sulfur difluoride					
OH ⁻¹ Hydroxide ion					
CCl ₄ Carbon tetrachloride					

Chapter 11 Gases

1. Convert a pressure of 898 mm Hg to

a. torr

b. Kpa

c. atm

d. psi

2. A 28.9 mL sample of gas is at a pressure 705 mm Hg. If the size of the gas sample changes to 102 mL, what is the new pressure of the gas sample? Assume the temperature remains constant.

3. Synthetic diamonds can be manufactured at pressures of 6.00×10^4 atm. If we took 4.00 liters of gas at 1.00 atm and compressed it to a pressure of 6.00×10^4 atm, what would the volume of that gas be?

4. Atmospheric pressure on the peak of Mt. Everest can be as low as 150 mm Hg, which is why climbers need to bring oxygen tanks for the last part of the climb. If the climbers carry 8.0 liter tanks with an internal gas pressure of 5.05 atm, what will be the volume of the gas when it is released from the tanks and the pressure changes to 150 mm Hg?

5. A balloon initially has a volume of 3.25 L at room temperature (25.5°C). If the balloon is placed in cold water (7.5°C) would you expect the balloon to expand or contract? Assume constant pressure.

b. Using the appropriate equation, calculate the volume of the balloon in the ice water.

6. A balloon initially has a volume of 1.24 L at a temperature of 32.1°C . If the volume of the balloon increases to 3.05 L, what is the temperature of the balloon? Assume constant pressure.