Chem Gas Worksheet #1. Blk ____ Name _____

Data to know & use! 1atm=760.mmHg=101.325kPa=14.7lb/in^2, or by 1989 definition
Standard Pressure = 100.kPa=750.1mmHg=14.5lb/in ^{2} = 0.987atm= 1Bar.
1mole gas @STP = 22.4L =22,400cm^3. STP=0°C, 1atm. 0 K = -273.15°C = -459.67°F.
1mole gas @ SATP = 24.8L =24,800cm^3, Standard Ambient Temp. & Pressure= 100.kPa, 25°C.

A. Pressures. Show a unit cancellation setup. WATCH SIG. FIGS.

a. 412 mmHg = _____ atm.

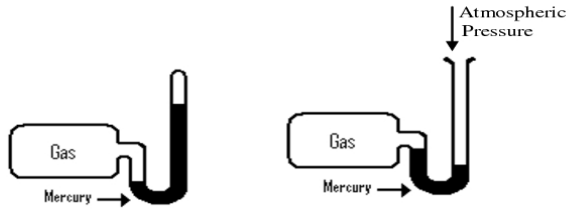
b. 760. KPa = _____ mmHg

c. 14.7 atm = _____ kPa

d. 101.325 lb/in^2 = _____ kPa

e. 22.4 mmHg = _____ kPa

B. Manometers.



Closed end manometer Open end manometer

a. In a closed end manometer, the mercury level was 690. mm higher on the closed end than on the gas side. What was the pressure of the gas?

_____ mmHg

b. In a closed end manometer, the Hg levels were 419 mm different. What was the gas pressure?

_____ mmHg

c. In a closed end manometer, the Hg levels were 1273 mm different. What was the gas pressure IN ATM?

_____ atm

d. Open end manometer: atmospheric pressure 760. mmHg, and the mercury level was 120. mm higher on the right side than the left. What was the gas pressure?

_____ mmHg

e. Open end manometer, atmospheric pressure 755 mmHg, Hg level 75 mm higher on the left. What was the gas pressure?

_____ mmHg

f. Open end manometer, with the atmospheric pressure 97.2 kPa. Mercury level 35 mm higher on the left. What is the gas pressure?

_____ kPa

C. Temperatures. a. 25°C = _____K b. -147°C = _____K c. 926K = _____°C

d. 35.2K = _____°C e. –2.8°C = _____K f. 12,780,000K = _____°C