WS 6.9 Review Sheet pg 1

1. To what temperature (˚C) would 12.3 g of He have to be cooled to fit in a 34.0 L tank at 1.17 atm?

Ans: _____

2. What would be the density of CH_4 at 132˚C and 725 mmHg?

Ans: _____

3. A gas sample occupies a volume of 34.8 L at 2.56 atm. What volume would it occupy at 3.47 atm?

Ans: _____

4. A 2.79 g sample of gas occupies a space of 735 mL at 1.78 atm and -21˚C. What is the molecular weight of the gas? What gas might it be: H_2, Ne, or CO_2?

Ans: _____ Ans: _____

5. If Ne particles are moving with an average velocity of 17.4 m/sec, how fast would the CH_4 particles be moving? How about the CO_2? *(all gases are in the same container & therefore the same temp!)*

Ans: _____ Ans: _____

6. **<u>The gas laws & relationships among the variables</u>**

- Boyle's Law states that _____ and volume are inversely related to each other. This is why a balloon expands in a _____.
- Charles's Law states that volume and temperature are _____ related to each other. This is why a balloon shrinks when liquid _____ is poured on it.
- Gay-Lussac's Law states that pressure varies directly with temperature. This is why areosol cans become _____ when the pressure is _____.

Ans #6: colder directly nitrogen pressure released vacuum

Ans (IRO) #1-5: -115, 0.458, 11.8, 19.6, 25.7, 44.0, 52.4 ***UNITS***: ˚C g/L L g/mol m/sec

WS 6.9 review sheet page 2

7. In the "wet dry ice lab", we placed a sample of _____ _____ (which is actually solid _____, not water) in a plastic _____ and placed a metal _____around the stem, then squeezed down on this with a pair of _____. This helped keep the _____ in the pipet as the dry ice _____, thus building up the _____ and taking the sample to the _____ _____, that unique _____ and _____ on the _____ diagram where all three phases (_____, _____ and _____) can exist together and where all three processes (_____, _____ and _____) can occur at the same time.

8. Bobby wanted to boil some acetone (a liquid which is somewhat _____ volatile than water, meaning it evaporates more _____). Remembering what he learned in _____ class, that a _____ will always _____ when its _____ _____ matches _____ _____, Bobby decides there are two ways he can boil the liquid: he can _____ the _____ to _____˚C, at which point its _____ _____ would equal the standard _____ psi, or he could _____ the _____ to around _____ psi, at which point the liquid would _____.

temp (˚C)	v.p. of acetone (psi)
25	4.8
50	7.4
75	14.7
100	27.9

9. Suzi does the "Boyle's Law lab" and collects the data at right. Use any two data lines to determine what value she gets for atmospheric pressure.
(any 2 data lines will work)

gauge press. (psi)	vol. (mL)
42.1	2.9
31.5	3.6
22.7	4.5
17.9	5.2

Ans: _____

10. 13.5 g of CO_2, 13.5 g of Ne and 13.5 g of CH_4 are all placed together in a tank at 762 mmHg. What is the partial pressure of the CO_2, the Ne, and the CH_4?

Ans: _____ Ans: _____ Ans: _____

11. Which gas in the tank above is moving the fastest?? _____

Ans (IRO+3): 4.8 12.6 14.7 15.7 75 129 216 280 354 atmospheric boil boil boiling chemistry clamp CH4 CO2 decrease dry force gas gas ice increase liquid liquid melting more O2 phase pipet pliers point pressure pressure pressure pressure pressure quickly solid sublimed subliming temp. temp. triple vapor vapor

Units (IRO): atm psi mmHg mmHg mmHg