General Chemistry
Mr. MacGillivray
Quiz #25:
Gas Laws I

How is a real gas different than an ideal gas?

Match the mathematical expression with the name of the law.

1. _____Graham's Law of Effusion	a) $P_1V_1 = P_2V_2$
2. _____Dalton's Law of Partial Pressures	b) $V_1/T_1 = V_2/T_2$
3. _____Boyle's Law	c) $P_1/T_1 = P_2/T_2$
4. _____Gay-Lussac's Law	d) $v_2/v_2 = (m_1/m_2)^{1/2}$
5. _____Charles's Law	e) $P_1V_1/T_1 = P_2V_2/T_2$
6. _____Combined Gas Law	f) $P_{tot} = P_1 + P_2 + P_3$

Solve the following problems. Show all work.

1.   A sample of gas occupies 4.00 L at 1.20 atm and 200 K. Find its volume when it is held at conditions of STP.

2.   Balloons are typically made of rubber. While they are usually water-tight they are not 100% "leak-proof" when it comes to gases.

(a) Which gas would leak out of balloon more quickly, pure He or pure O_2 ?

(b) Referring to your answer from (a), how many times more quickly would this gas effuse?