

# CHEMISTRY 3A --- WORKSHEET 14

## CHAPTER 13

1. Answer the following questions regarding changes in **P,T,V**, and **n**.
  - a. The pressure and temperature of a gas sample are doubled. If **n** is held constant, what change occurs in the volume?
  - b. The number of moles is doubled, while **P** and **V** are held constant. What change occurs in the temperature?
  - c. What change occurs in **n** if **P**, **V**, and **T** are all reduced by half?
2. During the first manned mission to Mars in 2015, a balloon was released into the thin Martian atmosphere. The balloon contained neon gas at 20.0 °C and 0.90 atm of pressure with a volume of 315 L. The atmosphere of Mars has a temperature of - 25 °C and a pressure of 30 mmHg. Assuming that the balloon is very elastic and can expand or contract easily, what will the volume of the balloon be upon release?
3. Which of the following gases could be used to float a balloon in air at STP?
  - a.  $C_2H_6$
  - b.  $HNO$
  - c.  $HF$

