

## College Prep Chemistry of the Earth System

### Assignment 7F

50 Points

#### Ideal Gas Law

*Answer the following questions*

1. What is the ideal gas law? What does the gas law add to the *combined gas law*?
2. What is  $R$ , *the universal gas constant*, used for in the ideal gas law?
3. What is an *ideal gas*?
4. What are the standard conditions for an *ideal gas*?

*Solve the following ideal gas law problems*

5.  $P = 2.00\text{atm}$ ,  $V = 1.20\text{L}$ ,  $T = 300\text{K}$   
Find mol of  $\text{CO}_2(\text{g})$  ( $n$ )
6.  $P = 1.80\text{atm}$ ,  $V = 0.90\text{L}$ ,  $T = 315.0\text{K}$   
Find mol of  $\text{O}_2(\text{g})$  ( $n$ )
7.  $n = 1.20\text{mol}$ ,  $P = 1.30\text{atm}$ ,  $T = 290.0\text{K}$   
Find volume of  $\text{SO}_2(\text{g})$  ( $V$ )
8.  $n = 0.90\text{mol}$ ,  $P = 1.15\text{atm}$ ,  $T = 320.0\text{K}$   
Find volume of  $\text{H}_2(\text{g})$  ( $V$ )
9.  $n = 0.60\text{mol}$ ,  $P = 1.40\text{atm}$ ,  $V = 4.50\text{L}$   
Find Temperature of  $\text{Cl}_2(\text{g})$  ( $T$ )
10.  $n = 1.30\text{mol}$ ,  $P = 3.50\text{atm}$ ,  $V = 11.5\text{L}$   
Find Temperature of  $\text{N}_2(\text{g})$  ( $T$ )
11.  $n = 1.20\text{mol}$ ,  $V = 9.20\text{L}$ ,  $T = 340.0\text{K}$   
Find Pressure of  $\text{NO}_2(\text{g})$  ( $P$ )
12.  $n = 1.60\text{mol}$ ,  $V = 5.30\text{L}$ ,  $T = 380.0\text{K}$   
Find Pressure of  $\text{SO}_3(\text{g})$  ( $P$ )