

Name \_\_\_\_\_ Period \_\_\_\_\_

## College Prep Chemistry of the Earth

## Assignment 6K (Part 2) – Fundamental Gas Law Review

20 Points

|                          |                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------|
| <i>Boyle's Law Forms</i> | $P_1 = \frac{P_2 V_2}{V_1}$ $V_1 = \frac{P_2 V_2}{P_1}$ $P_2 = \frac{P_1 V_1}{V_2}$ $V_2 = \frac{P_1 V_1}{P_2}$ |
| $P_1 V_1 = P_2 V_2$      |                                                                                                                 |

|                           |                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------|
| <i>Charles' Law Forms</i> | $V_1 = \frac{V_2 T_1}{T_2}$ $T_1 = \frac{V_1 T_2}{V_2}$ $V_2 = \frac{V_1 T_2}{T_1}$ $T_2 = \frac{V_2 T_1}{V_1}$ |
| $V_1 T_2 = V_2 T_1$       |                                                                                                                 |

|                               |                                                                                                                 |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <i>Gay-Lussac's Law Forms</i> | $P_1 = \frac{P_2 T_1}{T_2}$ $T_1 = \frac{P_1 T_2}{P_2}$ $P_2 = \frac{P_1 T_2}{T_1}$ $T_2 = \frac{P_2 T_1}{P_1}$ |
| $P_1 T_2 = P_2 T_1$           |                                                                                                                 |

|                               |                                                                                                             |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|
| <i>Combined Gas Law Forms</i> | $P_1 = \frac{P_2 V_2 T_1}{V_1 T_2}$ $V_1 = \frac{P_2 V_2 T_1}{P_1 T_2}$ $T_1 = \frac{P_1 V_1 T_2}{P_2 V_2}$ |
| $P_1 V_1 T_2 = P_2 V_2 T_1$   | $P_2 = \frac{P_1 V_1 T_2}{V_2 T_1}$ $V_2 = \frac{P_1 V_1 T_2}{P_2 T_1}$ $T_2 = \frac{P_2 V_2 T_1}{P_1 V_1}$ |

Complete the following problems based on the fundamental gas laws

|                                                                                                              |
|--------------------------------------------------------------------------------------------------------------|
| $V_1 = 1.81\text{L}, P_1 = 2.85\text{atm}$<br>$V_2 = 6.63\text{L}, P_2 = \underline{\hspace{1cm}}\text{atm}$ |
|--------------------------------------------------------------------------------------------------------------|

|         |  |
|---------|--|
| $P_2 =$ |  |
|         |  |

|         |  |
|---------|--|
| $P_2 =$ |  |
|---------|--|

|                                                                                                             |
|-------------------------------------------------------------------------------------------------------------|
| $V_1 = 21.4\text{L}, T_1 = 310.0\text{K}$<br>$V_2 = 15.3\text{L}, T_2 = \underline{\hspace{1cm}}\text{atm}$ |
|-------------------------------------------------------------------------------------------------------------|

|         |  |
|---------|--|
| $T_2 =$ |  |
|         |  |

|         |  |
|---------|--|
| $T_2 =$ |  |
|---------|--|

|                                                                                                                |
|----------------------------------------------------------------------------------------------------------------|
| $P_1 = 2.39\text{atm}, T_1 = \underline{\hspace{1cm}}\text{K}$<br>$P_2 = 4.12\text{atm}, T_2 = 410.38\text{K}$ |
|----------------------------------------------------------------------------------------------------------------|

|         |  |
|---------|--|
| $T_1 =$ |  |
|         |  |

|         |  |
|---------|--|
| $T_1 =$ |  |
|---------|--|

|                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| $V_1 = 6.53\text{L}, P_1 = 7.89\text{atm}, T_1 = \underline{\hspace{1cm}}\text{K}$<br>$V_2 = 3.58\text{L}, P_2 = 4.78\text{atm}, T_2 = 283.73\text{K}$ |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|

|         |  |
|---------|--|
| $T_1 =$ |  |
|         |  |

|         |  |
|---------|--|
| $T_1 =$ |  |
|---------|--|