

College Prep Chemistry of the Earth

Assignment 7J – Gas Law Review – Fundamental and Combined Gas Laws

20 Points

Complete the following problems based on the Combined Gas Law

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

<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>	$P_1 = \frac{P_2 V_2 T_1}{V_1 T_2}$	$V_1 = \frac{P_2 V_2 T_1}{P_1 T_2}$	$T_1 = \frac{P_1 V_1 T_2}{P_2 V_2}$
$P_1 V_1 T_2 = P_2 V_2 T_1$	$P_2 = \frac{P_1 V_1 T_2}{V_2 T_1}$	$V_2 = \frac{P_1 V_1 T_2}{P_2 T_1}$	$T_2 = \frac{P_2 V_2 T_1}{P_1 V_1}$

$V_1 = 5.48\text{L}, T_1 = \underline{\hspace{1cm}} \text{K}$
 $V_2 = 3.73\text{L}, T_2 = 210.12\text{K}$

$T_1 =$	_____

$T_1 =$	_____
---------	-------

$V_1 = \underline{\hspace{1cm}} \text{L}, P_1 = 7.95\text{atm}$
 $V_2 = 3.17\text{L}, P_2 = 5.34\text{atm}$

$V_1 =$	_____

$V_1 =$	_____
---------	-------

$V_1 = 3.71\text{L}, P_1 = 4.53\text{atm}, T_1 = 251.77\text{K}$
 $V_2 = 4.63\text{L}, P_2 = 3.54\text{atm}, T_2 = \underline{\hspace{1cm}} \text{K}$

$T_2 =$	_____

$T_2 =$	_____
---------	-------

$P_1 = 4.76\text{L}, T_1 = \underline{\hspace{1cm}} \text{K}$
 $P_2 = 3.59\text{L}, T_2 = 461.49\text{K}$

$T_1 =$	_____

$T_1 =$	_____
---------	-------

$V_1 = 4.08\text{L}$, $P_1 = 1.29\text{atm}$ $T_1 = 720.83\text{K}$
 $V_2 = 1.63\text{L}$, $P_2 = \underline{\hspace{1cm}}$ $T_2 = 832.47\text{K}$

$P_2 =$	
$P_2 =$	

$V_1 = \underline{\hspace{1cm}}\text{L}$, $P_1 = 0.93\text{atm}$
 $V_2 = 2.48\text{L}$, $P_2 = 1.37\text{atm}$

$V_1 =$	
$V_1 =$	

$P_1 = 1.12\text{L}$, $T_1 = 932.42\text{K}$
 $P_2 = \underline{\hspace{1cm}}\text{L}$, $T_2 = 726.28\text{K}$

$P_2 =$	
$P_2 =$	

$V_1 = 1.41\text{L}$, $P_1 = 3.89\text{atm}$ $T_1 = \underline{\hspace{1cm}}\text{K}$
 $V_2 = 3.61\text{L}$, $P_2 = 2.98\text{atm}$ $T_2 = 375.42\text{K}$

$T_1 =$	
$T_1 =$	

$V_1 = 1.48\text{L}$, $P_1 = 2.94\text{atm}$ $T_1 = 779.35\text{K}$
 $V_2 = \underline{\hspace{1cm}}\text{L}$, $P_2 = 3.95\text{atm}$ $T_2 = 562.82\text{K}$

$V_2 =$	
$V_2 =$	

$P_1 = 4.28\text{L}$, $T_1 = 560.21\text{K}$
 $P_2 = 3.95\text{L}$, $T_2 = \underline{\hspace{1cm}}\text{K}$

$T_2 =$	
$T_2 =$	