

Name _____ Period _____

College Prep Chemistry of the Earth

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

20 Points

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

<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

note: changed prob.

gas law
(V/P)

Boyle's Law
 $P_2 = \frac{P_1 V_1}{V_2}$

$V_1 = 1.81\text{L}, P_1 = 2.85\text{atm}$ $V_2 = 6.63\text{L}, P_2 = \underline{\hspace{1cm}}\text{atm}$
$P_2 =$
$P_2 =$
0.78atm

$V_1 = 21.4\text{L}, T_1 = 310.0\text{K}$ $V_2 = 15.3\text{L}, T_2 = \underline{\hspace{1cm}}\text{atm}$
$T_2 =$
$T_2 =$
221.64K

gas law
(V/T)

Charles' law
 $T_2 = \frac{V_2 T_1}{V_1}$

gas law
(P/T)

Gay-Lussac's law

$P_1 = 2.39\text{atm}, T_1 = \underline{\hspace{1cm}}\text{K}$ $P_2 = 4.12\text{atm}, T_2 = 410.38\text{K}$
$T_1 =$
$T_1 =$
238.06K

$V_1 = 6.53\text{L}, P_1 = 7.89\text{atm}, T_1 = \underline{\hspace{1cm}}\text{K}$ $V_2 = 3.58\text{L}, P_2 = 4.78\text{atm}, T_2 = 283.73\text{K}$
$T_1 =$
$T_1 =$
854.25K

gas law
(V, P, T)

Combined
 $\frac{P_1 V_1 T_2}{P_2 V_2}$