

Complete the following problems based on the Combined Gas Law

Boyle's Law Forms	$P_1 = \frac{P_2 V_2}{V_1}$	$V_1 = \frac{P_2 V_2}{P_1}$	$P_2 = \frac{P_1 V_1}{V_2}$	$V_2 = \frac{P_1 V_1}{P_2}$
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Charles' Law Forms	$V_1 = \frac{V_2 T_1}{T_2}$	$T_1 = \frac{V_1 T_2}{V_2}$	$V_2 = \frac{V_1 T_2}{T_1}$	$T_2 = \frac{V_2 T_1}{V_1}$
$V_1 T_2 = V_2 T_1$				

Gay-Lussac's Law Forms	$P_1 = \frac{P_2 T_1}{T_2}$	$T_1 = \frac{P_1 T_2}{P_2}$	$P_2 = \frac{P_1 T_2}{T_1}$	$T_2 = \frac{P_2 T_1}{P_1}$
$P_1 T_2 = P_2 T_1$				

Combined Gas Law Forms	$P_1 = \frac{P_2 V_2 T_1}{V_1 T_2}$	$V_1 = \frac{P_2 V_2 T_1}{P_1 T_2}$	$T_1 = \frac{P_1 V_1 T_2}{P_2 V_2}$
$\frac{P_1 V_1 T_2}{P_2 V_2 T_1}$	$P_2 = \frac{P_1 V_1 T_2}{V_2 T_1}$	$V_2 = \frac{P_1 V_1 T_2}{P_2 T_1}$	$T_2 = \frac{P_2 V_2 T_1}{P_1 V_1}$

$V_1 = 5.48\text{L}, T_1 = \text{___ K}$ $V_2 = 3.73\text{L}, T_2 = 210.12\text{K}$
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$V_1 = \text{___ L}, P_1 = 7.95\text{atm}$ $V_2 = 3.17\text{L}, P_2 = 5.34\text{atm}$
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$$T_1 = \frac{V_1 T_2}{V_2}$$

$T_1 =$	$5.48 \cancel{\text{L}} \cdot 210.12 \text{K}$
	$3.73 \cancel{\text{L}}$

$T_1 =$	308.70K	$\frac{V \text{ and } T}{\text{Charles}}$
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$$V_1 = \frac{P_2 V_2}{P_1}$$

$V_1 =$	

$V_1 =$		$\frac{V \text{ and } P}{\text{Boyle's}}$
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$V_1 = 3.71\text{L}, P_1 = 4.53\text{atm}, T_1 = 251.77\text{K}$ $V_2 = 4.63\text{L}, P_2 = 3.54\text{atm}, T_2 = \text{___ K}$
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$P_1 = 4.76\text{L}, T_1 = \text{___ K}$ $P_2 = 3.59\text{L}, T_2 = 461.49\text{K}$
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$$T_2 = \frac{P_2 V_2 T_1}{P_1 V_1}$$

Mult. bottom w/ () on calc!

$T_2 =$	$3.54 \cancel{\text{atm}} \cdot 4.63 \cancel{\text{L}} \cdot 251.77 \text{K}$
	$(4.53 \cancel{\text{atm}} \cdot 3.71 \cancel{\text{L}})$

$T_2 =$	245.54K	$\frac{P_1, V_1 \text{ and } T}{\text{Combined}}$
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$$T_1 = \frac{P_1 T_2}{P_2}$$

$T_1 =$	

$T_1 =$		$\frac{P \text{ and } T}{\text{Gay-Lussac}}$
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Check Answers: $T: 100 \approx 1500\text{K}$ $V: 0.1 \approx 50\text{L}$
 $P: 0.1 \approx 20\text{atm}$ Rnd to 2 after dec.