

Name:

Date:

Period:

Seat #:

$$P_1 \times V_1 = P_2 \times V_2; \quad \frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}; \quad K = ^\circ\text{C} + 273$$

Boyle's Law	Charles's Law
A sample of hydrogen at 1.50 atm had its pressure decreased to 0.50 atm producing a new volume of 750 mL. What was the sample's original volume? 250. mL	Fluorine gas at 300 K occupies a volume of 500 mL. To what temperature should it be lowered to bring the volume to 300 mL? 180 K
Chlorine gas occupies a volume of 1.20 liters at 720 torr pressure. What volume will it occupy at 1 atm pressure? 1.14 L	Helium occupies a volume of 3.80 Liters at -45°C . What volume will it occupy at 45°C ? 5.30 L
Fluorine gas exerts a pressure of 900 torr. When the pressure is changed to 1.50 atm, its volume is 250 mL. What was the original volume? 317 ml	A sample of argon gas is cooled and its volume went from 380 mL to 250 mL. If its final temperature was -55°C , what was its original temperature? 331 K / 58°C

Complete the following chart. Show your work.

	P ₁	V ₁	T ₁	P ₂	V ₂	T ₂
1	650. torr		100.0°	900. torr	225. L	150.0°C
2	850. mmHg	1.50 L	15.0°C		2.50 mL	30.0°C
3	125. kPa	125. L		100.1 kPa	100. mL	75°C