

COMBINED GAS LAW

Name _____

In practical terms, it is often difficult to hold any of the variables constant. When there is a change in pressure, volume and temperature, the combined gas law is used.

$$\frac{P_1 \times V_1}{T_1} = \frac{P_2 \times V_2}{T_2} \quad \text{or} \quad P_1 V_1 T_2 = P_2 V_2 T_1$$

Complete the following chart.

	P ₁	V ₁	T ₁	P ₂	V ₂	T ₂
1	1.5 atm	3.0 L	20° C 293K	2.5 atm	1.9L	30° C 303K
2	720 torr	256 mL	25° C 298K	798.7 torr	250 mL	50° C 323K
3	600 mmHg	2.5 L	22° C 295K	760 mmHg	1.8 L	269.0K
4	1.2 atm	750 mL	0.0° C 273K	2.0 atm	500 mL	25° C 298K
5	95 kPa	4.0 L	295.3K	101 kPa	6.0 L	471 K or 198° C
6	650. torr	274.7mL	100° C 373K	900. torr	225 mL	150° C 423K
7	850 mmHg	1.5 L	15° C 288K	536.6 mmHg	2.5 L	30° C 303K
8	125 kPa	125 mL	544.0K	100 kPa	100 mL	75° C 348K