

### Answer on Question #46612-Physics-Molecular Physics | Thermodynamics

The equation  $\frac{PV}{T} = \text{constant}$  . Reduce to Boyle's law.

#### Answer

The temperature of gas remains unchanged:

$$T = \text{constant}.$$

Then

$$PV = \text{constant}.$$

For comparing the same substance under two different sets of condition, it can be usefully expressed as

$$P_1V_1 = P_2V_2.$$

The equation shows that, as volume increases, the pressure of the gas decreases in proportion. Similarly, as volume decreases, the pressure of the gas increases. The law was named after physicist Robert Boyle.