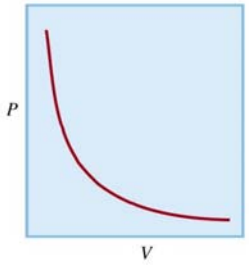
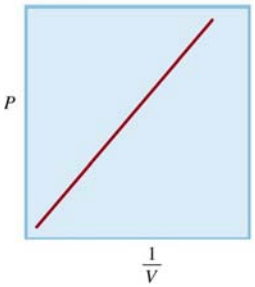
Boyle's Law

$P \times V = k$

Volume of a gas is inversely proportional to the pressure exerted on it.





Calculate the new volume of a gas that is pressurized from (100. kPa[1]) 0.987 atm and 2.0 L to 1.50 atm.

$$P_1 \times V_1 = P_2 \times V_2$$

$$0.987 \text{ atm} \times 2.0 \text{ L} = 1.50 \text{ atm} \times V_2$$

$$\frac{0.987 \text{ atm} \times 2.0 \text{ L}}{1.50 \text{ atm}} = V_2$$

$$V_2 = 1.30 \text{ L}$$

[1] In the United States kPa is rarely used by chemists even though it is the official SI unit for pressure. You will not be required to do any conversions using kPa. You will only be required to be able to convert atm and torr (mmHg) , 1 atm = 760 torr.