1 Boyles Law

At a constant temperature:

$$PV = constant \tag{1}$$

$$P = \frac{constant}{V} \tag{2}$$

$$P \propto \frac{1}{V} \tag{3}$$

2 Charles Law

At a constant pressure:

$$\frac{V}{T} = constant \tag{4}$$

$$P = constant \times T \tag{5}$$

$$V \propto T \tag{6}$$

3 Third gas law

At a constant volume:

$$\frac{P}{T} = constant \tag{7}$$

$$P = constant \times T \tag{8}$$

$$P \propto T \tag{9}$$

4 General gas law

$$\frac{PV}{T} = constant \tag{10}$$

5 Universl gas constant

For 1 mole of any gas, the value of PV/T is a constant (Equation 10), defined as the *universal gas constant, R*. In its general form (for n moles of the gas):

$$PV = nRT \tag{11}$$