

## Chemguide – questions

### OTHER GAS LAWS

1.
  - a) State Boyle's Law.
  - b) Boyle's Law can be given mathematically in the form:  $pV = \text{constant}$ . Show how this is consistent with the ideal gas equation,  $pV = nRT$ .
  - c) According to Boyle's Law, if you decrease the volume of a fixed mass of gas, the pressure will increase. Explain why that happens in terms of the Kinetic Theory.
  
2.
  - a) State Charles' Law.
  - b) Charles' Law can be given mathematically in the form:  $V = \text{constant} \times T$ . Show how this is consistent with the ideal gas equation.
  - c) Suppose you have a quantity of gas which half-fills a sealed polythene bag. Suppose you heat it in a way that only the gas in the bag gets hot, but not the surrounding air. The volume of the bag will be seen to increase in line with Charles' Law. Explain why that happens in terms of the Kinetic Theory.