

- 13** A sealed container is filled with an ideal gas which is initially at a temperature of  $50\text{ }^{\circ}\text{C}$ . The root-mean-square (r.m.s.) speed of the gas molecules at this temperature is measured to be  $400\text{ m s}^{-1}$ .

If the temperature of the gas is increased to  $100\text{ }^{\circ}\text{C}$ , what is now the r.m.s speed of the gas molecules?

- A**  $430\text{ m s}^{-1}$       **B**  $460\text{ m s}^{-1}$       **C**  $570\text{ m s}^{-1}$       **D**  $800\text{ m s}^{-1}$