Samples **Ideal Gas Equation**

1. A sample of diborane gas (B_2H_6) has a pressure of 68.1 kPa at a temperature of 11°C and a volume of 6.70×10^{-3} m^3. If conditions are changed such that the pressure is 45.4 kPa and the volume is 10.86×10^{-3} m^3, what will be the temperature of the sample?

2. A sample of diborane gas (B_2H_6) has a pressure of 56.5 kPa at a temperature of 6°C and a volume of 13.70×10^{-3} m^3. If conditions are changed such that the temperature is 10°C and the pressure is 60.2 kPa, what will be the volume of the sample?

3. A sample of diborane gas (B_2H_6) has a pressure of 29.2 kPa at a temperature of 33°C and a volume of 6.40×10^{-3} m^3. If conditions are changed such that the temperature is 24°C and the pressure is 67.7 kPa, what will be the volume of the sample?