



Show all work and units.

1. A person using an oxygen mask is breathing air with 68% N_2 . What is the partial pressure of the N_2 when the air pressure in the mask is 98.3 kPa?

2. How much faster will hydrogen escape through a porous container than carbon dioxide?

3. The weather news from an orbiting Mars satellite gives the atmospheric pressure as 0.30 atm. What is this atmospheric pressure in kiloPascals?

4. A gas occupies a volume of 4.52 L at a pressure of 1.43 atm. What volume will the gas occupy at sea level if the temperature remains unchanged?

5. What will be the volume of a gas sample at 112 °C if its volume at -16.5 °C is 3.42 L? Assume that pressure is constant.

6. Explain in detail 2 major differences between an ideal gas and a real gas.