GASES PRACTICE WORKSHEET

1. A sample of a gas with a volume of 5.6 liters is placed in a piston at a pressure of 1.5 atm. The piston is compressed until its volume is 4.8 L. What is the new pressure inside the piston?

2. A toy balloon has an internal pressure of 1.05 atm and a volume of 5.0 L at a temperature of 20 °C. What will happen to the volume when the balloon rises to an altitude where the pressure is 0.65 atm and the temperature is –15 °C?

3. If 3.0 moles of N₂ and 4.0 moles of O₂ are placed in a 35 L container at a temperature of 25 °C, what will the pressure of the resulting mixture of gases be?
4. Ethylene (C\textsubscript{2}H\textsubscript{4}) burns in oxygen to form carbon dioxide and water vapor:

\[ C_2H_4(g) + 3O_2(g) \rightarrow 2CO_2(g) + 2H_2O(g) \]

How many liters of CO\textsubscript{2} are formed if 1.65 liters of O\textsubscript{2} are consumed in this reaction?

5. A sample of gas with a volume 130 liters is placed in a piston at a temperature of 250 °C. If the gas is cooled until the volume decreases to 85 liters, what will temperature of the gas be?

6. What’s the partial pressure of carbon dioxide in a container that holds 5.0 moles of carbon dioxide and 3.0 moles of nitrogen, and has a total pressure of 1.2 atm?

7. What is the volume occupied by 35.4 g of nitrogen gas at 35 °C and 735 mmHg?
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**ANSWERS:**

1) 1.8 atm

2) 7.11 L

3) 4.89 atm

4) 1.10 L

5) 69 °C

6) 0.75 atm

7) 33.0 L