

Pre-AP Chemistry/Chemistry/AP Chemistry
Unit #17—Gas Laws

PARTIAL PRESSURES AND MOLE FRACTION

1. A study of the effects of certain gases on plant growth requires a synthetic atmosphere composed of 1.5 mol percent CO_2 , 18.0 mol percent O_2 , and 80.5 mol percent Ar. If the total pressure of the atmosphere is 745 torr, calculate the partial pressure for each gas.
2. What are the mole fractions of each component in a mixture of 5.08 grams O_2 , 7.17 grams N_2 , and 1.32 grams H_2 ? What is the partial pressure, in atm, of each component of this mixture if it is held in a 12.4 L vessel at 15°C ?
3. The partial pressure of CH_4 is 0.175 atm and the partial pressure of O_2 is 0.250 atm. What is the mole fraction of each gas if the mixture occupies a volume of 10.5 L at 65°C ?