

### Dalton's Law of Partial Pressures

1. What is the pressure of a mixture of helium, nitrogen, and oxygen if their partial pressures are 600 mm Hg, 150 mm Hg, and 102 mm Hg? **852 mm Hg**
2. A mixture of oxygen, carbon dioxide, and nitrogen has a total pressure of 0.97 atm. What is the partial pressure of oxygen if the partial pressure of carbon dioxide is 0.70 atm and the partial pressure of nitrogen is 0.12 atm?
3. A flask contains a mixture of hydrogen and oxygen. The pressure being exerted by these gases is 785 mm Hg. If the partial pressure of the hydrogen in the mixture is 395 mm Hg, what is the partial pressure of the oxygen? **390 mm Hg**
4. An environmental testing lab uses a pump and cylinder to collect a sample of air near a leaking natural gas line. The lab finds the total pressure in their sample cylinder is 776.134 mm Hg. Analyzing the sample, they find it contains oxygen, nitrogen, and methane. What is the partial pressure of the methane in units of Pascal if the partial pressure of oxygen is 253.948 mm Hg and the partial pressure of nitrogen is 515.390 mm Hg?
5. The barometer shows the atmospheric pressure to be 762 mm Hg. What is the partial pressure of nitrogen if nitrogen makes up 78 percent of the air? **594 mm Hg**
6. What partial pressure of oxygen is a scuba diver breathing if the total pressure is 6.3 atm, and 20 percent of the air is oxygen?
7. What is the atmospheric pressure if the partial pressures of nitrogen, oxygen, and argon are 77.75 kPa, 19.94 kPa, and 1.99 kPa, respectively? **99.68 kPa**
8. The gases carbon dioxide, oxygen, and argon are mixed in a container. All gases have the same partial pressure, and the total pressure of the container is 32,680 Pa. What is the partial pressure of argon?
9. The partial pressure of water vapor in a greenhouse is 139.0 mm Hg, which is 18 percent of the total pressure. What is the total pressure in the greenhouse? **772 mm Hg**
10. What is the total gas pressure in a sealed flask that contains oxygen at a partial pressure of 0.41 atm and water vapor at a partial pressure of 0.58 atm?