

Name _____ Date _____ Period _____

Dalton's Law of Partial Pressure: $P_{total} = P_1 + P_2 + P_3 \dots P_n$

Temperature (°C)	Pressure of H ₂ O (kPa)
0	0.61
5	0.87
10	1.23
15	1.71
20	2.34
25	3.17
30	4.25
35	5.63
40	7.38
45	9.59
50	12.34

Temperature (°C)	Pressure of H ₂ O (kPa)
55	15.75
60	19.93
65	25.02
70	31.18
75	38.56
80	47.37
85	57.82
90	70.12
95	84.53
100	101.32
105	120.79

Use the table above to answer the following questions:

1. A gas is collected by water displacement at 50°C and a barometric pressure of 95.00 kPa. What is the pressure exerted by the "dry" gas (without water)?

2. Determine the partial pressure of oxygen collected over water if the temperature is 20.0°C and the total gas pressure is 735 torr.

3. The barometer at an indoor pool reads 105.00 kPa. If the temperature in the room is 30.0°C, what is the partial pressure of the "dry" air?

4. Nitrogen, oxygen, and carbon dioxide are in a closed container. The oxygen has a partial pressure of 15.5 mm Hg. The nitrogen has a partial pressure of 45.8 mm Hg. The total pressure of all gases is 83.4 mm Hg. What is the partial pressure of the carbon dioxide?

5. A gas is collected by water displacement so that its partial pressure is 50.00 kPa. The total pressure of the gas over water is 75.02 kPa.
 - (a) What is the partial pressure of water?

 - (b) What is the temperature at which the gas was collected?

6. Carbon dioxide is collected over water at 35°C. The total pressure of the system is 0.493 atm. What is the partial pressure of the CO₂?