# Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hour: \_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

# Chemistry: *Density of Gases*

Solve each of the following problems, being sure to show your work and include all proper units.

1. A sample of gas has a density of 0.53 g/L at 225 K and under a pressure of 108.8 kPa. Find the density of the gas at 345 K under a pressure of 68.3 kPa.

2. A sample of gas with a mass of 26 g occupies a volume of 392 L at 32oC and at a pressure of 0.95 atm. Find the density of the gas at STP.

3. A gas sample has a density of 1.77 x 10–4 g/L when the temperature is 15oC and the pressure is 780 mm Hg. Find the density of the gas at STP.

4. What is the mass of a 3.00 L sample of a gas if this volume was measured at 40oC and 99.2 kPa? Assume that the density of the gas at 20oC and 101.3 kPa is 1.43 g/L.

5. A sample of gas has a volume of 2.68 L when the temperature is –54oC and the pressure is 195.0 kPa. If the density of the gas is 0.322 g/L at STP, find the mass of the sample.

Answers: 1. 0.217 g/L 2. 0.078 g/L 3. 1.82 x 10-4 g/L 4. 3.93 g 5. 2.07 g

# KEY

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# Chemistry: *Density of Gases*

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Finally, calculate the mass of the gas 



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