Dougherty Valley HS Chemistry - AP
Gas Laws – Ideal Gas Law

Worksheet #3

Name: **Period:** **Seat#:**

$$PV = nRT$$

$$MM = \frac{dRT}{P}$$

P =
V =
n =
R =
T =
MM =
d =

R Values

atm →

kPa →

mmHg →

Directions:
First – label the variables and list the R values in the boxes on the right side of the worksheet. Then - solve the following Problems below. Assume all number are 3 significant figures. Remember to show your work!

1) How many moles of oxygen will occupy a volume of 2.50 liters at 1.20 atm and 25°C? *0.123 mol*	**2)** What volume will 2.00 moles of nitrogen occupy at 720. torr and 20.°C? *50.8 L*
3) What pressure will be exerted by 25.0 g of CO_2 at temperature of 25°C and a volume of 500. mL? *27.8 atm*	**4)** At what temperature will 5.00 g of Cl_2 exert a pressure of 900. torr at a volume of 750. mL? *153 K/ -120°C*
5) What is the density of NH_3 at 800. torr and 25°C? *0.733 g/L*	**6)** If the density of a gas is 1.2 g/L at 745 torr and 20. °C, what is its molar mass? *29.4 g/mol*

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7) How many moles of nitrogen gas will occupy a volume of 347 mL at 6680 torr and 27°C? *0.124 mole*	**8)** What volume will 454 grams (1 lb) of hydrogen occupy at 1.05 atm and 25°C? *5240 L*
9) Find the number of grams of CO_2 that exert a pressure of 785 torr at a volume of 32.5 L and a temperature of 32°C. *59.0 g CO_2*	**10)** An elemental gas has a mass of 10.3 g. If the volume is 58.4 L and the pressure is 758 torr at a temperature of 2.5°C, what is the gas? *4.00 g/mol He*