IDEAL GAS LAW

Name _____

Use the Ideal Gas Law below to solve the following problems.

PV = nRT where P = pressure in atmospheres
V = volume in liters
n = number of moles of gas
R = Universal Gas Constant
0.0821 L•atm/mol•K
T = Kelvin temperature

1. How many moles of oxygen will occupy a volume of 2.5 liters at 1.2 atm and 25° C?

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2. What volume will 2.0 moles of nitrogen occupy at 720 torr and 20̄° C?

   _____

3. What pressure will be exerted by 25 g of CO_2 at a temperature of 25° C and a volume of 50̄0 mL? _____

4. At what temperature will 5.00 g of Cl_2 exert a pressure of 900. torr at a volume of 75̄0 mL? _____

5. What is the density of NH_3 at 80̄0 torr and 25° C? _____

6. If the density of a gas is 1.2 g/L at 745. torr and 20̄° C, what is its molecular mass?

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7. How many moles of nitrogen gas will occupy a volume of 347 mL at 6680 torr and 27° C? _____

8. What volume will 454 grams (1 lb) of hydrogen occupy at 1.05 atm and 25° C?

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9. Find the number of grams of CO_2 that exert a pressure of 785 torrs at a volume of 32.5 L and a temperature of 32° C. _____

10. An elemental gas has a mass of 10.3 g. If the volume is 58.4 L and the pressure is 758 torrs at a temperature of 2.5° C, what is the gas? _____