What is pressure (in atm) would be exerted by a mixture of 1.4 g of N_2 gas and 4.8 g of O_2 ga in a 200 mL container at 57 °C?

A) 17.0
B) 27.0
C) 34.0
D) 44.7

What is the volume of 300 mL sample of a gas at STP occupied when the pressure is doubled constant temperature?

A) 150 mL
B) 250 mL
C) 350 mL
D) 600 mL

Calculate the number of moles of a gas present in a 26.5 L container at 25 °C and 5016 mmHg.

A) 7.150 mol
B) 9.130 mol
C) 17.00 mol
D) 36.48 mol

Caffeine's molecular formula is $C_8H_{10}N_4O_2$. The molar mass of caffeine is 194 g/mol. What is the percentage of carbon in caffeine?

A) 8.20 %
B) 16.5 %
C) 28.9 %
D) 49.5 %

For the balanced chemical equation below:

$$C_4H_4 + 5O_2 \rightarrow 4CO_2 + 2H_2O.$$

What is the mass of water that could be produced? If 0.3618 mol of C_4H_4 react with 1.818 mol of O_2

A) 11.02 g
B) 13.09 g
C) 19.64 g
D) 65.50 g

12- The numbers required to balance the equation (respectively) are:

$$Fe_2O_{3(s)} + CO_{(g)} \rightarrow CO_{2(g)} + Fe_{(s)}$$

A) 1,1,1,1
B) 1,1,1,2
C) 1,3,3,2
D) 2,1,1,4

3- How many phosphorus atoms are in 2.57 g of P?

A) 0.0829 atoms
B) 2.5700 atoms
C) 7.26×10^{24} atoms
D) 4.99×10^{22} atoms

What is the density of N_2 gas at 0 °C and 2 atm?

A) 0.50 g/L
B) 1.05 g/L
C) 1.63 g/L
D) 2.50 g/L

A compound with a composition of 87.5 % N and 12.5 % H was recently discovered. What is the empirical formula for this compound?

A) NH_2
B) N_2H_3
C) NH
D) N_2H

A solution is made by dissolving some salt in beaker of water. The salt is refer

A) solvent
B) solute
C) solution
D) filtrate

If the water pressure is 99.136 atm. What is this pressure in KPa?

A) 0.9650×10^4 KPa
B) 1.0045×10^4 KPa
C) 1.1329×10^4 KPa
D) 6.0542×10^4 KPa

What is the mass of Na_2SO_4 is required to prepare 400 mL of 1.50 M Na_2SO_4 solution?

A) 2130 g
B) 56.80 g
C) 71.40 g
D) 85.20 g

The total pressure P_t for the gaseous products collected over water of the following reaction equals:

$$A_{(s)} + B_{(l)} \rightarrow C_{(s)} + D_{(g)}$$

A) $P_C + P_D + P_{H_2O}$
B) $P_D + P_{H_2O}$
C) $P_B + P_D + P_{H_2O}$
D) $P_A + P_D + P_{H_2O}$

Classify the following reaction by giving all of these reaction type(s) that apply.
I. oxidation/reduction (redox) II. combination III. Decomposition

$$P_{4(s)} + 10Cl_{2(g)} \rightarrow 4PCl_{5(g)}$$

A) only I
B) only II
C) only III
D) I and II

A sample of gas occupies 3.5 L at 300 K. What volume will it occupy at 200 K?

A) 1.5 L
B) 2.0 L
C) 2.3 L
D) 5.0 L