Test Prep

Fill in the blank:

_____ is the study of matter, its properties, and the changes it undergoes

_____ is anything that has mass and volume

Solids	Liquids	Gasses
_____ shape	_____ shape	_____ shape
_____ volume	_____ volume	_____ volume
_____ attractive forces between particles	_____ shape of container	_____ shape and volume as container
Particles vibrate _____	Particles move slowly in _____ directions	Particles are far apart and move at _____ speeds with little attraction to each other

Which of the following are homogenous and heterogenous mixtures?
Hot fudge sundae, baby shampoo, sugar water, peach pie

What are some examples of intensive properties?

Identify each as a physical or chemical change:

Ice melts in the sun

Burning a candle

Cutting a pizza

Iron rusting in an old car

Determine the amount of significant figures:

0.00108

5000

$2.3x10^4$

6.003

2.012 + 61.09 + 3.0 =

2.8 X 67.40 / 34.8 =

What is the volume (mL) of a 14.7g sample of the liquid given that the density is 1.32g/mL?

Convert:

1053L to mL

35.3nm to m

Who discovered electrons with the cathode ray, and what model did he use?

Who discovered neutrons with the gold foil experiment?

How many protons, neutrons, and electrons does ^{197}Au have and Ca^{2+}?

How many protons, neutrons, and electrons does magnesium-25 have and N^{3-}?

Chlorine-35 has a mass of 34.969 amu and abundance of 75.75%, and chlorine-37 has a mass of 36.966amu and an abundance of 24.24%. What is the average atomic mass?

Elements in the same column have _____ chemical and physical properties.

Write the formula for the following compounds;

Copper (II) chloride

tin (IV) oxide

Calcium nitrate

ammonium sulfate

Write the name for the following compounds:

$Fe_3(PO_4)_2$ $BaCO_3$ H_2O

What is a mole? What is Avogadro's number?

How many He atoms are in 3.5 mol of He?

How many atoms of O are in 1.50 moles of Na_2CO_3?

How many moles of $CaCO_3$ are in 23.5g of $CaCO_3$?

How many grams of Na are in 1.00g of Na_3PO_4?

How many grams of glucose is there in 5.23×10^{24} molecules of $C_6H_{12}O_6$?

Calculate the percent composition for calcium, nitrogen, and oxygen in $Ca(NO_3)_2$

Calculate the empirical formula given a compound contains 38.7% K, 13.9% N, and 47.4% O.

What is the molecular formula given the molar mass of CH_3O is 62.1g/mol?

Convert 29.5 grams of Fe to grams of Fe_2O_3?

$4Fe + 3O_2 \longrightarrow 2Fe_2O_3$

Balance:

_____Fe + _____H_2SO_4 $\longrightarrow$ _____$Fe_2(SO_4)_3$ + _____H_2

Balance:

_____ Al + _____HCl $\longrightarrow$ _____ $AlCl_3$ + _____H_2

24g of Al and 48g of O are combined, and 40.4g of aluminum oxide (Al_2O_3) is produced. What is the limiting reactant and the percent yield of Al_2O_3 in grams? How many grams of excess reactant remain?

Propane (C_3H_8) is used as a fuel, and it undergoes complete combustion. If 12.3g of propane reacts with 40.0g of oxygen gas, what is the limiting reactant?

Identify the types of reactions:

$2Na + Cl_2 \longrightarrow 2NaCl$

$2Al_2O_3 \longrightarrow 4\ Al + 3O_2$

$C_3H_8 + 5O_2 \longrightarrow 3CO_2 + 4H_2O$