Chapter E-3 Review sheet

Calculate:

2.1 + 6.84 + 2.684+ 8 2.143-2.1 (3.1381-2.66+2.097)/3.12

Convert:

12.6 ml/inch^2 to L/ft^2

The density of water from one set of units to another in 3 different ways

2) Given the energy of an electron beamed onto a metal surface, $E_{vo,}$ derive the kinetic energy of an electron assuming binding energy, **ψ,** of the metal surface is equal to *Hf* and then, derive kinetic energy assuming a threshold frequency, $V_{0,}$ is > **ψ/**H.

Write all possible quantum numbers (n,l,ml,ms)

3s 4p

What is the mass percent of Cl in dichloromethane? (CH_2CL_2)
Mass percent of oxygen in glucose? ($C_6H_{12}O_6$)

Write the formula for:

Lead (II) Sulphate
Trinitrogen tetrafluoride
Calcium Hydroxide
Silver Chlorate
Vanadium (III) Sulfate

Sodium Acetate
Strontium Nitrate
Nickel (IV) Chloride

Name the Following:

$Ca3(PO_4)_2$
$(NH_4)_3CO_3$
XeF_4

C_2H_6
K_2SO_4
$Au(C_2H_3O_2)_2$

Chapter E-3 Review sheet

Rank the following elements from smallest to largest in atomic radii:

Ca^{+2} P Cl^{-} K^{+} Se As Li^{-} Fr O_2^{-2} Mg^{+2} Co

James the Imposter has created a new compound on another planet with two new elements he discovered, X and Z. He synthesizes the compound with naturally occurring phosphorus and finds that the mass percent of P and Z are 54.15 and 2.16 percent by mass respectively. The molar mass of X is 12.136 g/mol and the molar mass of Z is 341.28 g/mol. What is the empirical formula of XPZ? After the correct calculations, round to the nearest whole number or to half whole number.

James goes one step further and wants to represent his new structure, named Jamesoniumm, as a Lewis structure. XPZ can simply be written as XPZ_2 where:

X has an electronegativity of 2.1
Z has an electronegativity of 1.8
P has an electronegativity of 3.3

In this universe,
X is in group 4
Z is a halogen in period 3
P has 6 valence electrons

Draw a valid Lewis Structure for Jamesoniumm.

Later in the future James discovers that he was incorrect about the nature of X and that X actually exists as a diatomic element and can form compounds with nitrogen in a new nitrogenated universe. His new compound has a percent by mass of 42.476% and 57.526% for X and N, respectively. In this universe, nitrogen has the same properties as before but has a molar mass of 23 g/mol. What is the empirical formula of the compound James created?