Chemistry 2202 – Formula Worksheet #9

Name: _____

Answers:

1) _____ 5) _____

2) _____ 6) _____

3) _____ 7) _____

4) _____ 8) _____

For questions 1-4, find the empirical formula for the percent composition data given.

(1) 19.7% N, 80.3% F
(2) 25.9% P, 74.1% Cl
(3) 46.8% Sc, 50.0% O, 3.2% H
(4) 62.1% Pb, 12.4% P, 25.5% O

For questions 5-7, find the molecular formula given the percent composition and molar mass data given.

(5) 85.6% C, 14.4% H, M = 84.18 g/mol
(6) 29.7% Si, 70.3% F, M = 756.72 g/mol
(7) 32.7% C, 9.2% H, 58.1% O, M = 770.91 g/mol
(8) An experiment is conducted to find the formula of a hydrate of lead (IV) nitrate. ($Pb(NO_3)_4 \bullet XH_2O$). The following mass data was collected:

Mass of empty beaker	15.65 g
Mass of beaker + $Pb(NO_3)_4 \bullet XH_2O$ (before heating)	54.61 g
Mass of beaker + $Pb(NO_3)_4$ (after heating)	45.24 g

Complete the following table

Mass of $Pb(NO_3)_4 \bullet XH_2O$ used	
Mass of $Pb(NO_3)_4$ left after heating	
Mass of water lost	

Use the data in the above table to find the formula of the hydrate. Write the answer in the blank for #8 above.