

FUN IN CHEM PROBLEM #1

You should start realizing that all the information we have learned since August can finally start getting put together! This question is meant to tie many many topics together. It is a good source of review but is also a good way to start seeing how you are expected to "connect the dots" and not just memorize single topics in isolation.

Directions: Answer the question(s). Label which topic each step is. Show any and all work possible. At the "Check Points" you can come check your answer. You will be told if it is right or wrong, but not why. You will have to work backwards to figure out what you got wrong so you can keep going!

Question: How many molecules of the unknown compound do you have?

#	Prompt	Topic(s)	Work/Answer
1	You start with a metal that has the electron configuration of $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$		
2	Write the <u>compound</u> made from these two elements: 1) The missing element from this equation: $^{235}_{92}\text{U} + ^1_0\text{n} \rightarrow ^{95}_{36}\text{Kr} + \text{_____}$ 2) And a halogen with 45 neutrons		
Stop and check your answer to #2 with the teacher			
3	What kind of reaction do you get if you react your answer to #1 and #2		
4	Predict your products from the reaction		
5	Balance your equation		
6	Rank each of the <u>elements</u> in your products from smallest to largest atomic radius		
Stop and check your answer to #6 with the teacher			
7	Make a new <u>compound</u> by reacting your largest element from #6 and an element that is required for hydrogen bonding, <i>but</i> pick the required hydrogen bonding element that has the lowest electronegativity (one of the H bonding elements that is NOT H)		
8	What is the molar mass of this new compound from #7? Don't forget units! Use two decimal places.		
Stop and check your answer to #8 with the teacher			
9	If you have 50 grams of the compound from #7 how many moles of it do you have? Use dimensional analysis. Your answer should have three decimal places and units.		
10	Using your answer to #9, how many molecules of the compound from #7 do you have? Use dimensional analysis. Your answer should be in scientific notation and have units.		