

Name these compounds		molar mass of compound	% composition by mass of the metal in this compound
1. MgSO_4			
2. $\text{Ba}(\text{OH})_2$			
3. CaCl_2			
4. $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$			

5. Put these statements in a CHRONOLOGICAL order (oldest first): _____

- A. Rutherford shoots alpha particles at gold, discovers the positive nucleus and he puts the negative electrons in orbits.
- B. Electrons exist in energy levels called orbitals. These are zones of their most likely to be found.
- C. Democritus thinks about some things and invents the concept of the atom
- D. Thomson uses the cathode ray tube to discover the electron as a separate particle of the atom. Since he likes his wife's plum pudding, he imagines the atoms as food, putting his electrons into the positive "mush" or "pudding" of the atom.
- E. Dalton finds himself bored with farming so he invents modern chemistry in his barn. His Atomic Theory stands today with some exceptions. His "model" of the atom was similar a very tiny, hard sphere. These little balls had different masses, but otherwise were the same as each other.
- F. Neils Bohr does the math to save his boss's idea of the atom. He puts the electrons into distinct orbits, where they can fly around with out losing energy and when they jump to higher energy levels they are excited, when they return to the ground state, they release spectra.

species		mass	Number of moles present
6	NaCl	214 grams	
7	Cu	624 grams	
8	Al ₂ O ₃	501 grams	

9. Convert 0.658 Liters into milliliters with a math calculation.
10. What is the normal boiling point of ethanol?
11. The mass of a sample of cobalt is 464 grams. What is the volume?
12. What phase is phosphorous at 299K?
13. Skip this one
14. Which of these is aqueous?
Strontium sulfate, calcium carbonate, ammonium sulfide, sodium hydroxide
15. Write the formula for both aluminum dichromate and calcium hydrogen carbonate.
16. Write the names of these two compounds: PCl₅ and SCl₂
17. How many kilojoules of energy are absorbed when 6.0 moles of C₂H₂ form?
18. Write a balanced equation showing zinc metal going into hydrochloric acid.
19. Name the type of reaction that happens in question #18 just above.
20. Comparing ethanol and propanone, which has a higher vapor pressure at 50°C and which has stronger intermolecular attractions?
21. When aluminum oxide forms, is that an exo or endothermic reaction?