FRONT OF CARD INFO	BACK OF CARD INFO
EMPIRICAL FORMULA	Simplest formula of a compound. **How to solve the problem:** You will usually be given information on percentages or grams and will need to convert these to moles and then to a molar ratio (sometimes you have to multiply the molar ratio to get it to a whole number)
Molecular formula	This is the actual formula, not the simplest, of a molecular compound (covalent) For example: CH_2 (simplest) versus C_4H_8 (not simplified) Pay attention to the fact that the formulas are multiples of each other and so the formula masses of each compound will also be a multiple. **To find the multiple:** $\frac{FM\ molecular}{FM\ of\ empirical} = multiplier$
Average atomic mass	This is a weighted average of an element based on the percentage abundance of all the known isotopes **How to solve the problem:** Multiply the masses by percentages and then add all of those values together Make sure you understand the term weighted average and the fact that the more abundant something is the more it weighs on the average (so the average should be closer to its value)
Combustion of a hydrocarbon	Generic combustion equation: $C_xH_y + O_2 \rightarrow H_2O + CO_2$ Anytime you see the word combustion/burned and see that it is a hydrocarbon… just plug in the actual hydrocarbon given and balance
Molar Ratio	A ratio of moles of one compound to another How to solve: convert everything into moles and divide by the smallest value This is a very useful tool as it is used in limiting reactants, empirical formulas as well as other places in chemistry. Remember moles is a quantity which is why we can make this comparison

Limiting Reactant	Will limit the amount of product produced because it will "run out" before other reactants and stop the reaction Whenever given amounts of more than 1 reactant find limiting reactant BEFORE you calculate anything else! **How to determine:** convert all quantities of your reactants to moles and find the molar ratio. Then compare it to the ratio from the balanced chemical equation Normally it helps to ask which do I have too much of (excess)
Percent Composition by mass	Is a percentage based on the mass of an individual part compared to the whole mass. Based on the percentage equation: $\frac{Part}{Whole} \times 100\%$ This is a tricky topic! It seems pretty simple but there are a hundred different ways that you will have to apply this… **Using percentages to find mass:** multiply the whole mass by the percentage (don't forget to move decimal on percentage) to get the "part" **Finding percentages:** You will need to total up all of the masses present to get the whole. Then divide the part you are interested in by the "whole" and multiply by 100%.