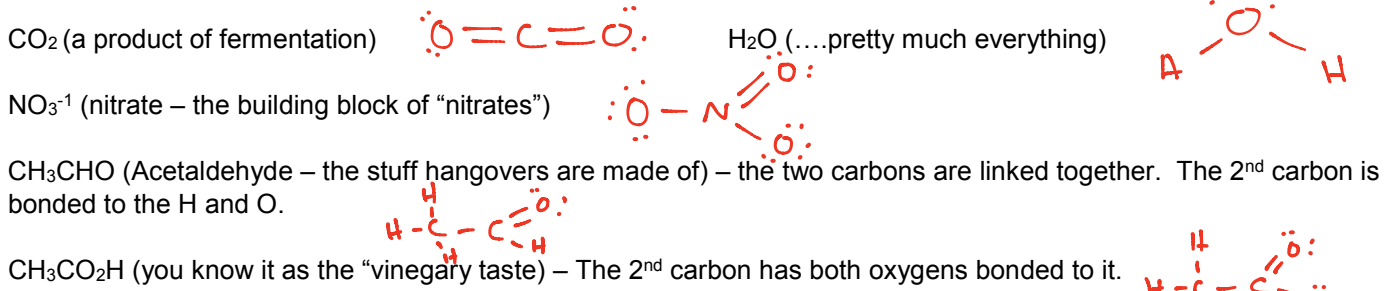


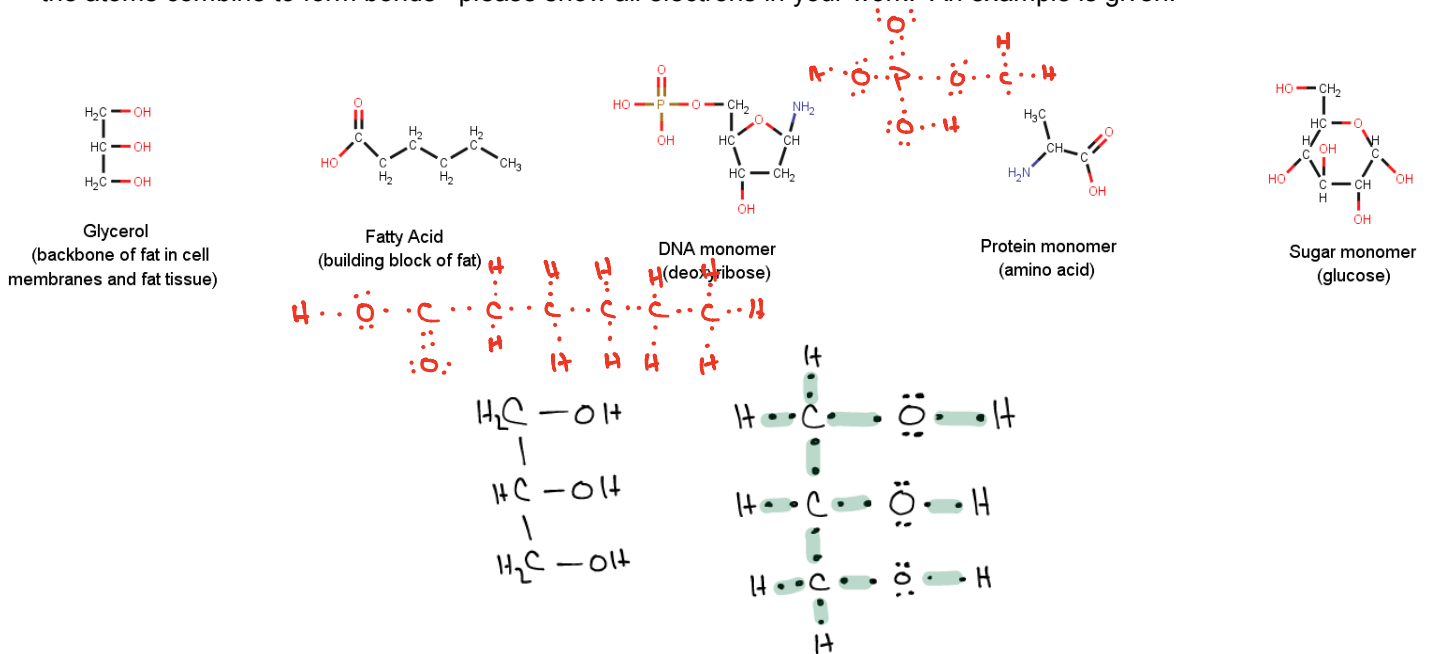
Use any resource at your disposal to answer these questions. Please bring this work to class on Feb. 10th.

In this exercise, my goal is to walk you through how to think about biological molecules. In class, we did not have time to explore all of this together (which was my plan). Please give yourself sufficient time to work through this material and see me early and often for guidance.

1. Draw a Lewis structure for each of these food/nutrition related molecules:

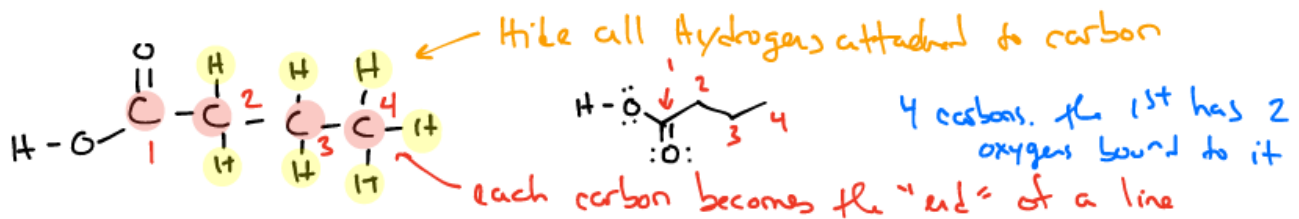


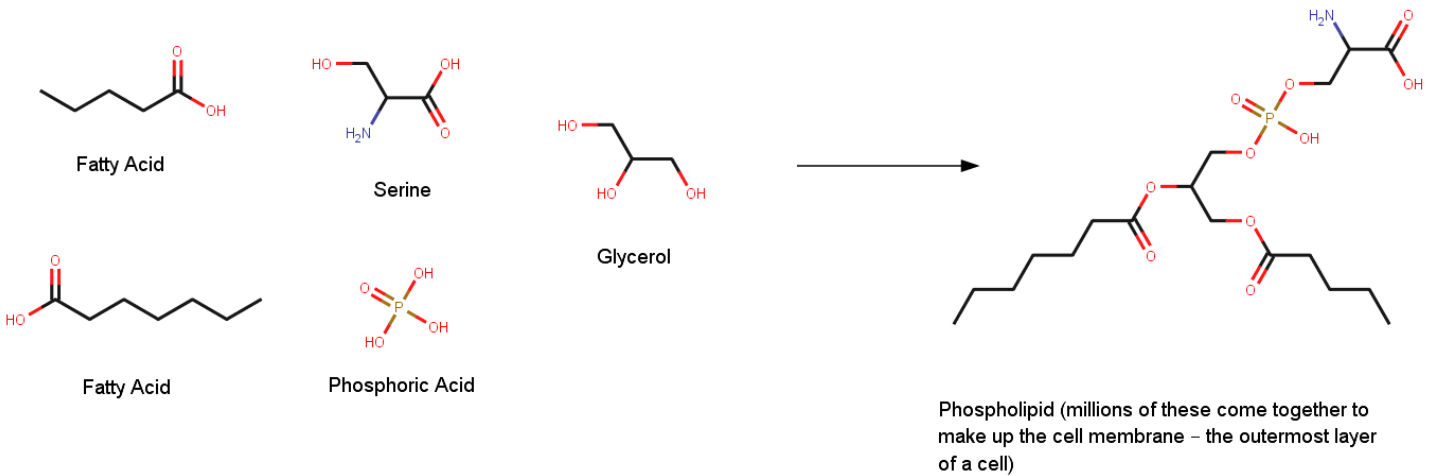
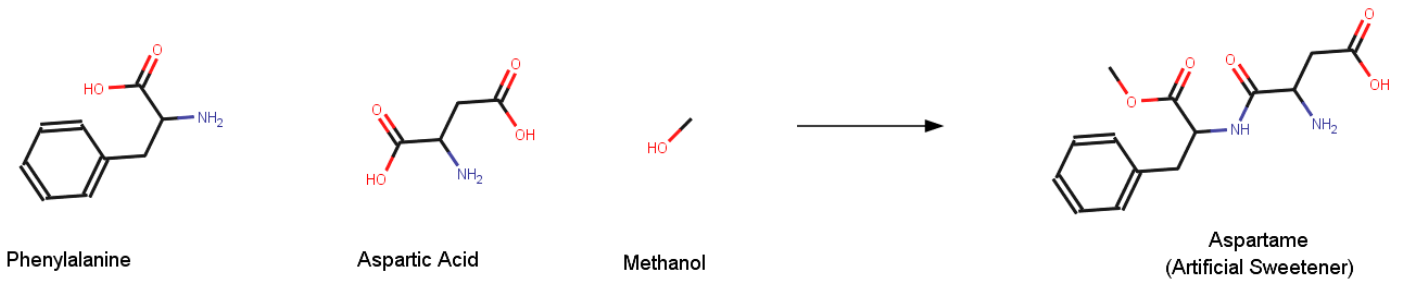
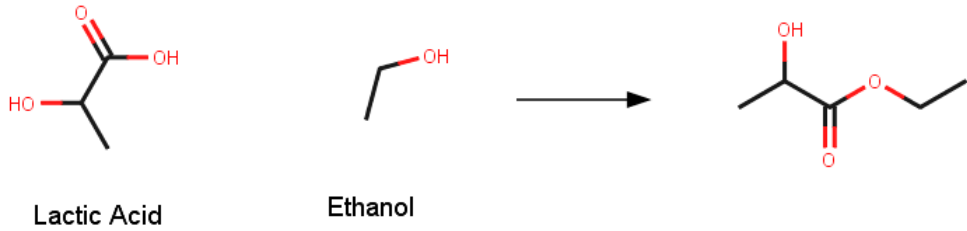
2. Each of the structures below show a building block of a biological polymer. Deconstruct each molecule to show how the atoms combine to form bonds –please show all electrons in your work. An example is given.



3. Molecules are commonly shown in “stick” form. This is a “lazy chemist” strategy to more quickly depict the structure of organic molecules. Since all organic molecules are built from carbon and hydrogen (and usually a lot of carbon and hydrogen atoms), these atoms are abbreviated. Hydrogen atoms are not shown if they are bonded to a carbon. Carbon atoms are shown as the end or bend in a line. The resulting structure is a bunch of lines with “heteroatoms” (anything that is not carbon or hydrogen) shown.

Please convert each of the structures in problem 2 to stick renderings. An example is given.

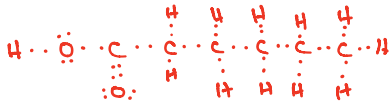




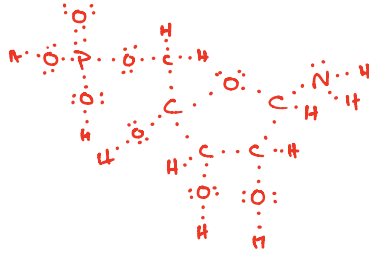
5. Amino acids all have the same backbone: $\text{H}_2\text{N}-\text{CH}-\text{CO}_2\text{H}$. Several amino acids are used in problem 3 and 4. Name all four of these molecules.

Tryptophan, phenylalanine, aspartame

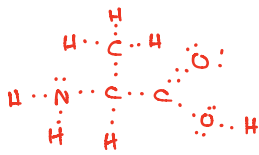
② FAT



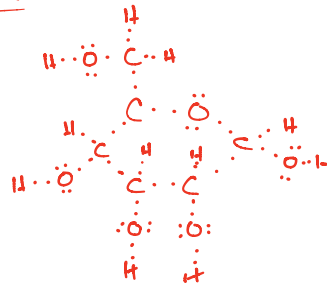
DNA



Protein



SUGAR

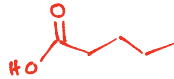


③

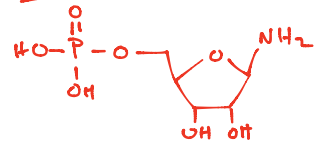
Glycerol



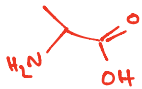
Fatty Acid



DNA



Protein



Sugar

