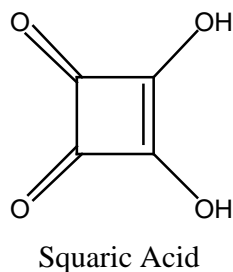


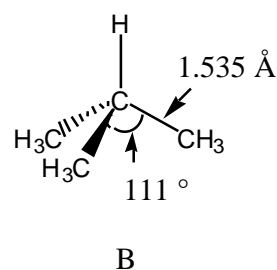
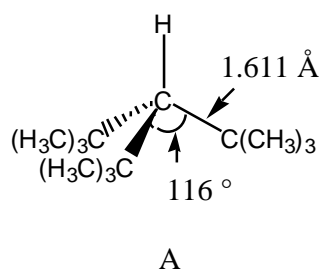
Problem Set #2
CH241-2001F

[1] Explain the following observations.

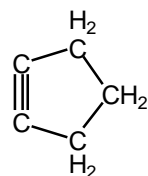
(a) In the dianion of squaric acid (resulting from the loss of both protons), all the carbon-carbon bonds are of the same length as are all the carbon-oxygen bonds.



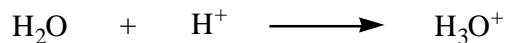
(b) The bond length and bond angle shown below are greater in **A** than **B**.



(c) Cyclopentyne is a very unstable molecule.



[2] Apply your knowledge of molecular orbital theory to guess which one of the following two reactions is likely to occur. Carefully defend your choice.



[3] Carefully draw a Newman projection for the cyclopropane ring looking down any one of the three C-C bonds.