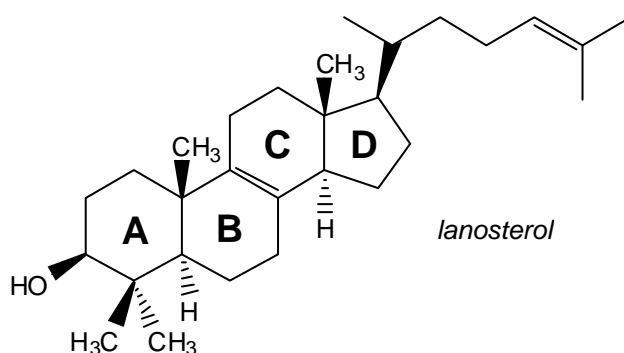
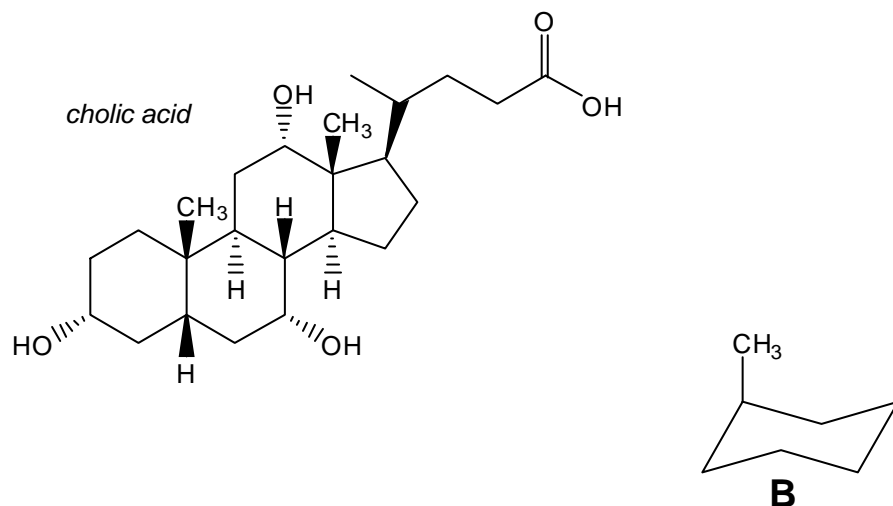


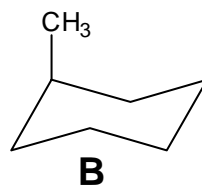
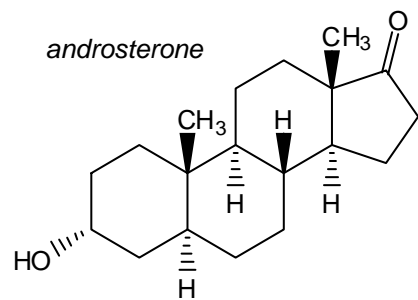
### Workshop 9 Fused Rings in Steroids

Steroids are a class of hydrophobic molecules with a characteristic carbon skeleton containing four fused cycloalkanes. In animals, all steroids are derived from one common precursor, lanosterol, which is modified by biosynthetic, chemical reactions to produce other steroids. Steroids serve a wide variety of functions in the body. For example, cholic acid (a bile acid) is used to help transport and excrete fats from the liver, while androsterone (a steroid hormone) activates protein synthesis in muscle.



- a) On the other side of this page, draw three-dimensional structures of cholic acid and androsterone. I have already drawn the B ring, including its methyl group, for both structures; just add to what I've started. Draw all of the atoms and bonds that are shown in the two-dimensional drawing.





- b) Of the substituents you drew on rings **A**, **B** and **C** in each structure, which are axial and which are equatorial?