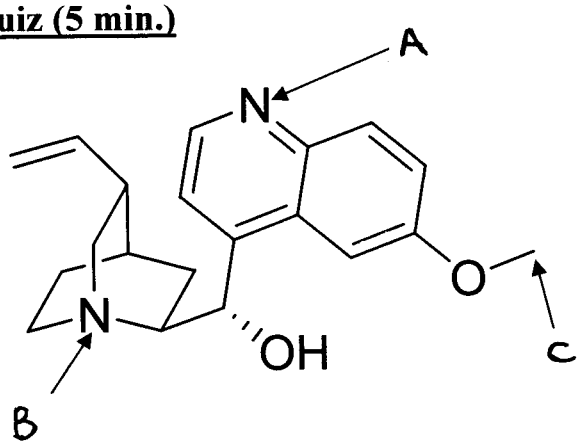
# Chem 30A- Week 2

## Warm-up: speed quiz (5 min.)




quinine

The structure above is quinine- an anti-malarial agent.

a. What is the **total** number of hydrogens?
b. What does the dash represent?
c. What is the hybridization of the atom labeled **A**?
d. How many lone pair electrons on the atom labeled **B**?
e. What is the name of the group labeled **C**?
f. Draw any possible resonance structures.

## Discussion Questions

1. A *carbocation* is a trivalent carbon with a positive charge.

Draw the structure of a carbocation. Justify your structure.

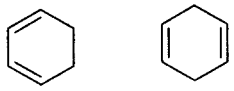
What is the hybridization of the carbon atom?
What geometry does the carbocation have?
What relationship do you see between a cabocation and $BF_3$?

## Chapter 2

2. What is the hybridization for each carbon atom?

   a. propane
   b. 1-butyene-3-yne
   c. 2-methylpropene
   d. dimethyl ether
   e. cyclobutene

3. What is the relationship of the below compounds? Draw any resonance structures.



4. Draw all possible resonance structures. Identify the most stable and explain why.