Hybridization

Step 1: What are the resonance structures?

Step 2: What are the possible hybridizations of each atom for each resonance structure?
- How many other atoms is it bonded to?
  - That’s the minimum number of hybridized orbitals needed
- How many multiple bonds does it have?
  - That’s the minimum number of “pure p” orbitals needed
- How many lone pairs does it have?
  - Lone pairs are the only thing that may be in either!!!

Step 3: What is the most hybridized state common to all resonance structures?

- N  sp²
- O  sp²
Problems for Hybridization

Find hybridization states of all indicated atoms

See POD#5

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\begin{align*}
\text{CH}_3 & \quad \text{N} \quad \text{CH}_2 \text{CH}_2 \text{O} \text{CCH}_3 \\
\text{CH}_3 & \quad \text{Br} \quad \text{O} \\
\text{CH}_3 & \quad \text{CH}_3 \\
\text{CH}_3 & \quad \text{CH}_3 \\
\text{CH} & \quad \text{P} = \text{C} = \text{C} = \text{C} (\text{CH}_3)_2 \\
\text{CH}_3 & \quad \text{C} \equiv \text{CH} \\
\text{CH} = \text{C} & \quad \text{OH}
\end{align*}
\]