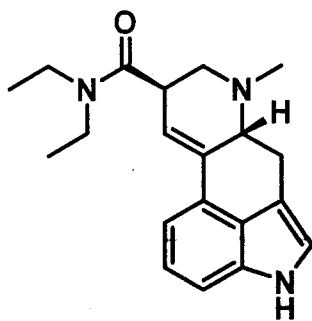


Resonance for Fun and ProfitWell, for Fun Anyway.

Warm-up Problem:

This is the structure (line form) of (+)-lysergide:



How many:

- hydrogen atoms are in the structure?
- non-bonded valence electron pairs (lone pairs) are there in (+)-lysergide?
- atoms in (+)-lysergide have tetrahedral geometries?
- carbon atoms are in the structure?

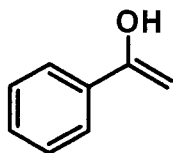
What is the convenient three-letter abbreviation for (+)-lysergide (hint: Ken Kesey handed it out all over the country)?

On to the meat of the worksheet ...

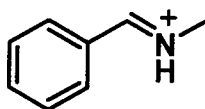
Write all possible resonance structures for the following molecules and ions. Remember to write arrows showing how the electrons move to make the next structure!

a) $[\text{PO}_4\text{H}]^{2-}$ (P is the central atom, with an expanded octet)

b)



c)



d)

