

**NAME (Print):** \_\_\_\_\_

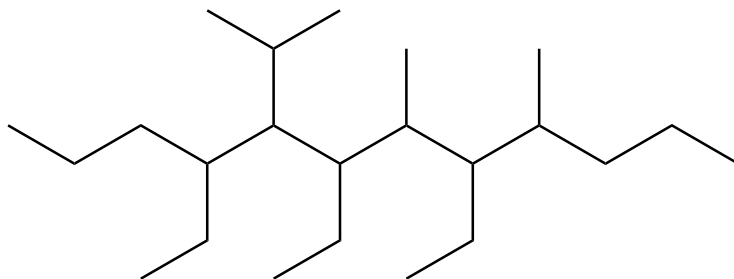
**SIGNATURE:** \_\_\_\_\_

**Chemistry 320M/328M  
Dr. Brent Iverson  
3rd Homework  
September 9, 2024**

**Please print the  
first three letters  
of your last name  
in the three boxes**

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1) (3 pt) One last nomenclature question for you! This is a complicated one! On the line provided, write the IUPAC name of the following molecule.



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2) (3 pt) In the box provided, make a line-angle drawing of the following molecule:

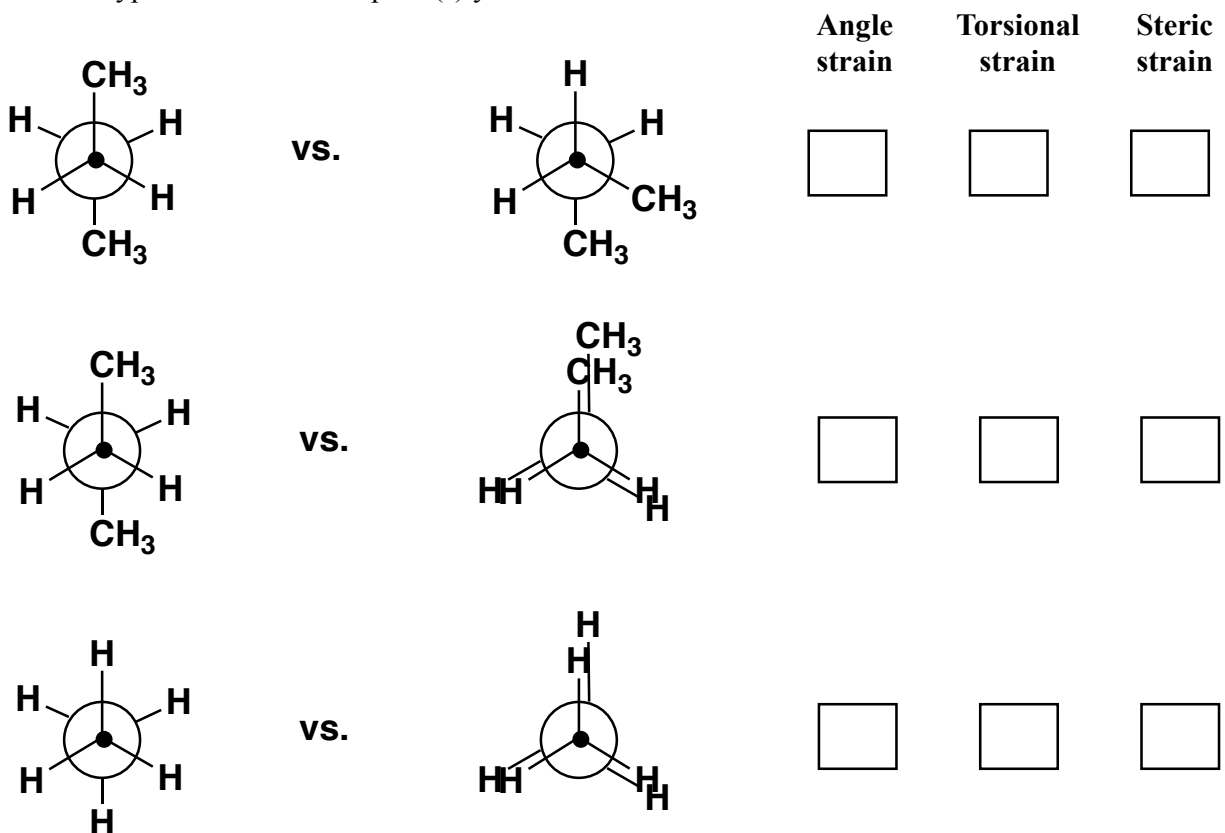
3-Ethyl-2-methyl-7-(1,1-dimethylethyl)decane

For organic chemistry, it is best to think of \_\_\_\_\_ as waves.

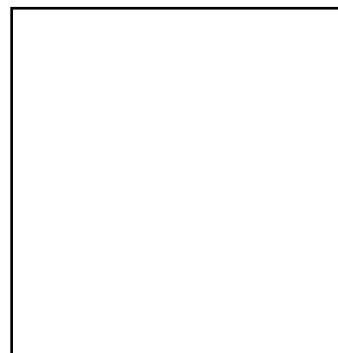
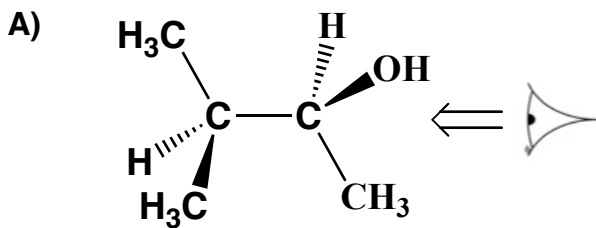
According to the valence bond approach, the atomic orbitals on each atom are combined first to create \_\_\_\_\_ orbitals, that overlap to create \_\_\_\_\_ bonds.

Three (or more) atom "pi-ways" are the situation resonance \_\_\_\_\_ structures are usually trying to describe. For pi bonding and therefore pi delocalization to occur over more than two atoms (i.e. pi-ways), parallel and overlapping \_\_\_\_\_ orbitals are needed on ALL of the adjacent atoms involved. As a result, all of the atoms involved in pi-ways are usually \_\_\_\_\_ hybridized, and NEVER \_\_\_\_\_ hybridized.

4. (4 pts each) For each pair of molecules, circle the one that has LESS STRAIN, then put an "X" in the box under all the types of strain that explain(s) your answer:

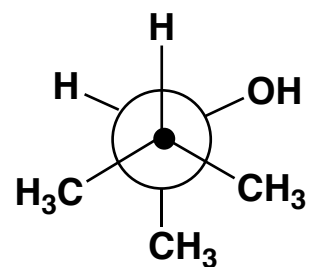
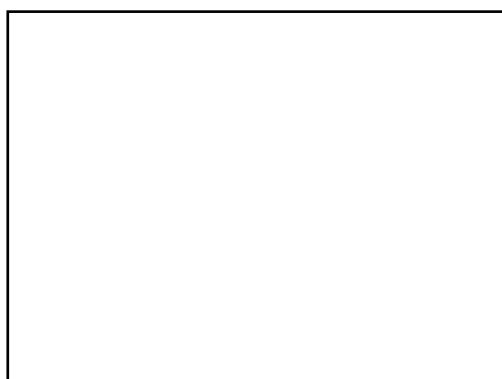
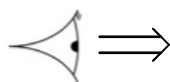


5. (5 pts) Draw the Newman projection for the conformation of 3-methyl-3-butanol as shown.



(5 pts) In the empty box draw the conformation of 3-methyl-3-butanol indicated by the Newman projection shown.

B)



6. (1 pt each) In the boxes provided, write the hybridization state of the atoms indicated by the arrow.

