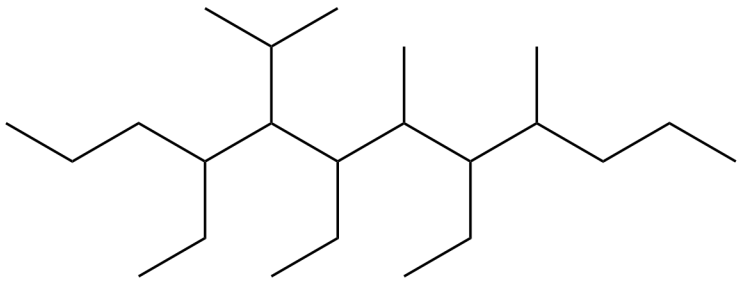
NAME (Print): _____

SIGNATURE: _____

Chemistry 320M/328M
Dr. Brent Iverson
3rd Homework
September 9, 2026

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

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.



_____

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

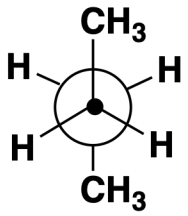
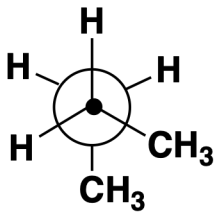
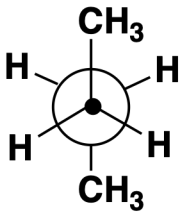
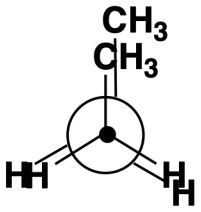
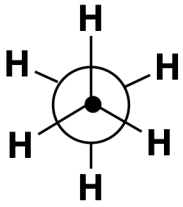
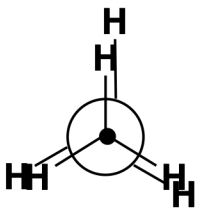
3-Ethyl-2-methyl-7-(1,1-dimethylethyl)decane

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.

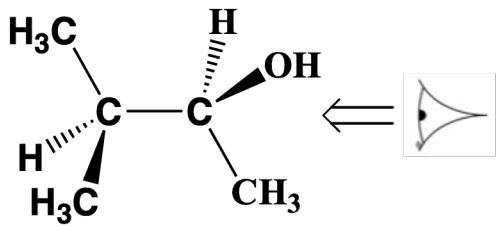
Three (or more) atom "pi-ways" are the situation resonance _____ structures are usually trying to describe. For pi bonding and therefore pi delocalization to occur over more then two atoms (i.e. pi-ways), parallel and overlapping _____ orbitals are needed on ALL of the adjacent atoms involved. As a result, all of the atoms involved in pi-ways are usually _____ hybrized, 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:

			Angle strain	Torsional strain	Steric strain
	vs.		☐	☐	☐
	vs.		☐	☐	☐
	vs.		☐	☐	☐

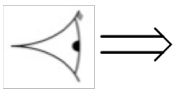
5. (5 pts) Draw the Newman projection for the conformation of 3-methyl-3-butanol as shown.

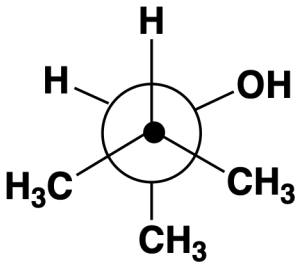
A)



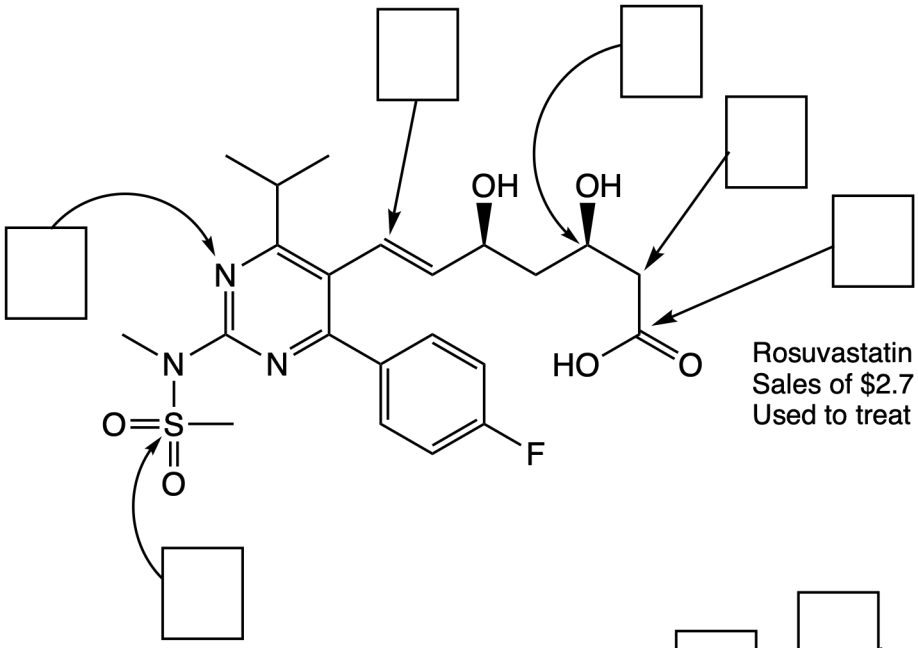
(5 pts) In the empty box draw the conformation of 3-methyl-3-butanol indicated by the Newman projection shown.

B)

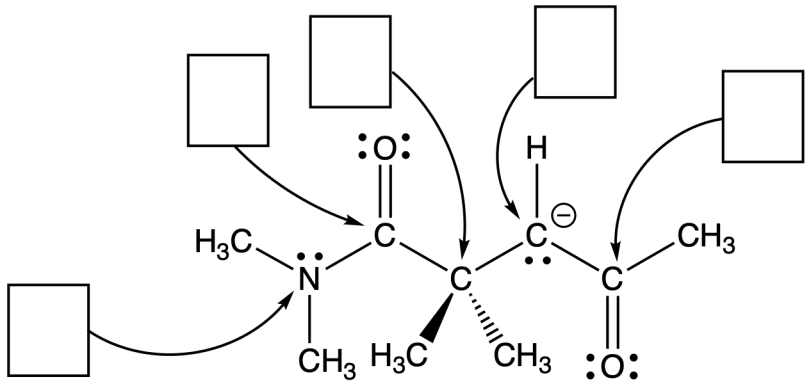


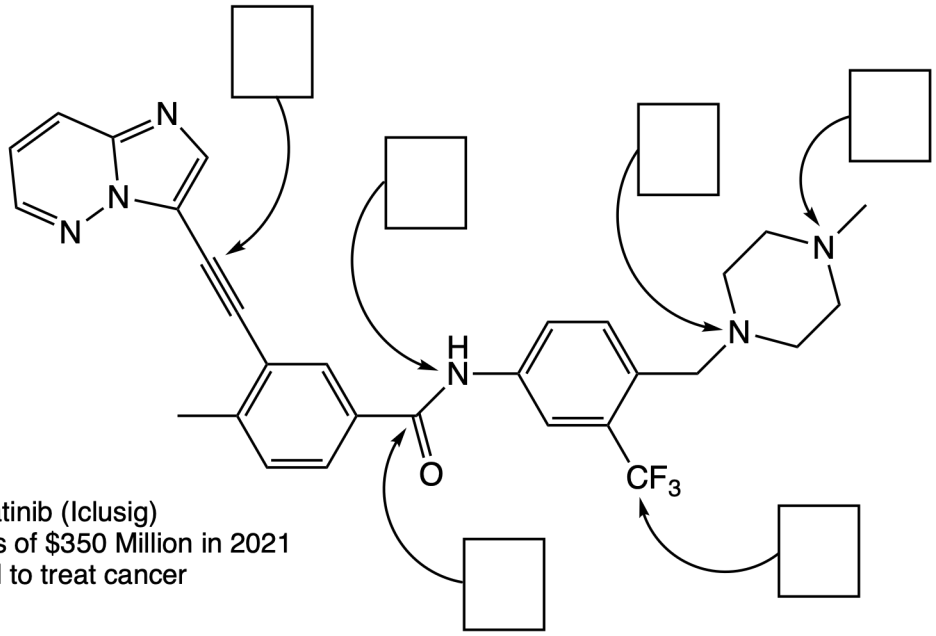


6. (1 pt each) In the boxes provided, write the hybridization state of the atoms indicated by the arrow.



Rosuvastatin (Crestor)
Sales of $2.7 Billion in 2021
Used to treat heart problems





Ponatinib (Iclusig)
Sales of $350 Million in 2021
Used to treat cancer