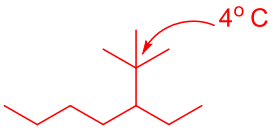
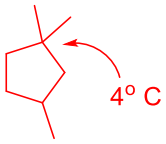
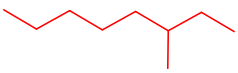
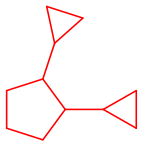
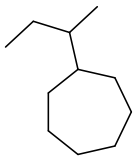
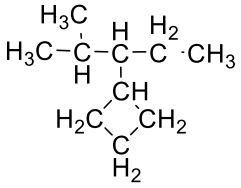
Recitation Questions: "Say my name, say my name" *September 4, 2026*

1. The College recently hired a new staff member, Cardi C, to oversee our chemical inventory labeling operation. However, I've recently noticed a few chemicals with some suspicious names. Please see if you can find the problems in the examples below.
a) Draw the structure based on the name given.
b) Offer the correct compound name based on the rules that we discussed in class.

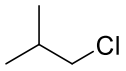
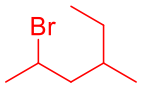
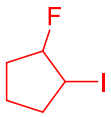
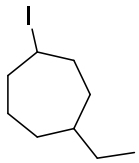
i) 3-tert-butylheptane	ii) 1,3,3-trimethylcyclopentane	iii) 6-methyloctane
 Proper name: 3-ethyl-2,2-dimethylheptane (need to use simpler substituents)	 Proper name: 1,1,3-trimethylcyclopentane (lower combination of numbers)	 Proper name: 3-methyloctance (lower number counting from other end of alkane chain) No 4° C's!

2. In problem #1, identify all the quaternary carbons in these structures by writing 4° C next to them.

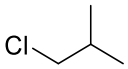
3. Provide the necessary information to complete the table.

Name	Structure	Name	Structure
2,2,5-trimethylhexane	$CH_3C(CH_3)_2CH_2CH_2CH(CH_3)CH_3$	1,2-dicyclopropyl-cyclopentane	
sec-butylcycloheptane		3-cyclobutyl-2-methylpentane	

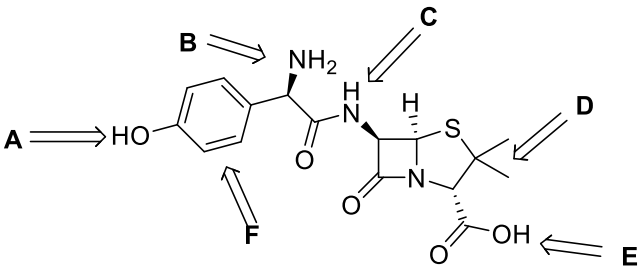
4. We didn't talk about the nomenclature of halogens or halide groups on alkane structures (Klein waits to introduce alkyl halide nomenclature to Chapter 7), but they operate the same as alkyl substituents. F-, Cl-, Br- and I- groups are given the prefix fluoro-, chloro-, bromo- and iodo-; and the appropriate number based on the same rules used for methyl-, ethyl-, isopropyl-, etc. Given that information, name or draw the following compounds based on the prompt.

Structure	Name	Structure	Name
	1-chloro-2-methylpropane		2-bromo-4-methylhexane
	1-fluoro-2-iodocyclopentane		1-ethyl-4-iodocycloheptane

5. For smaller halogenated molecules, instead of formal or official names, common names are often used. These names take an alkyl name and simply add the word fluoride, chloride, bromide or iodide at the end of the alkyl name. So for example, CH_3-I has a common name of "methyl iodide", but a formal name of iodomethane. Provide common names for the structures shown below.

		
Name: _isopropyl bromide____	**Name:** _isobutyl chloride____	**Name:** _cyclopropyl fluoride____

6. Identify the functional groups noted below on the structure of amoxicillin, an antibiotic that you've all probably had for strep throat or ear infections when you were young.



amoxicillin

A. _____alcohol_____

B. _____amine_____

C. _____carboxylic amide_____

D. _____alkyl or methyl_____

E. _____carboxylic acid_____

F. _____benzene_____