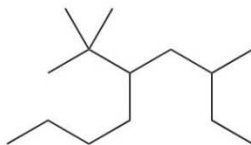


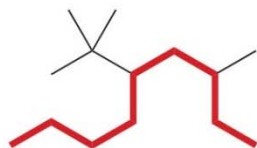
Give the IUPAC name for the following compound.



### Solution

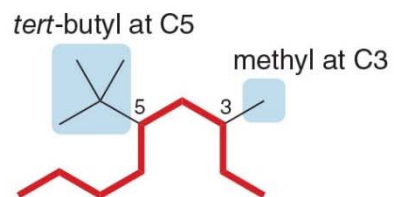
To help identify which carbons belong to the longest chain and which are substituents, box in or highlight the atoms of the long chain. Every other carbon atom then becomes a substituent that needs its own name as an alkyl group.

**Step 1: Name the parent.**



9 C's in the longest chain  
**nonane**

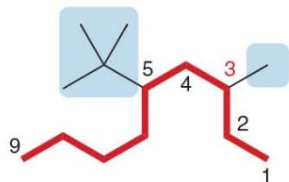
**Step 3: Name and number the substituents.**



*tert*-butyl at C5

methyl at C3

**Step 2: Number the chain.**



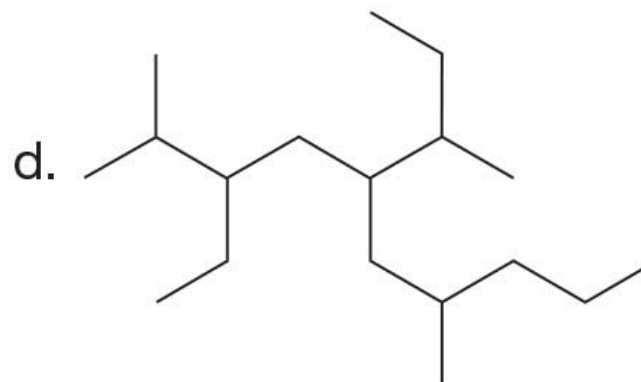
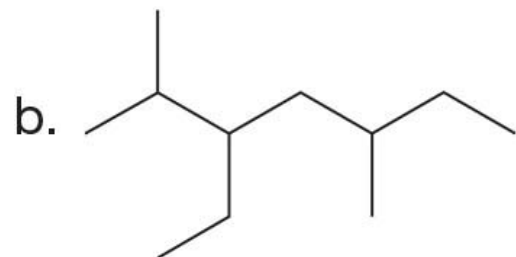
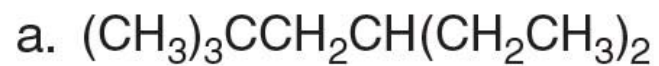
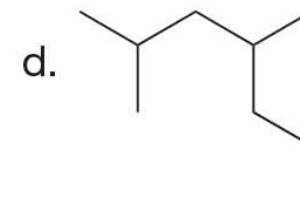
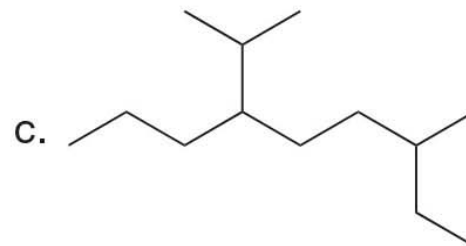
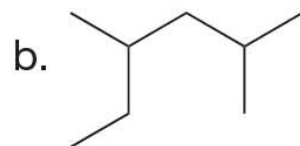
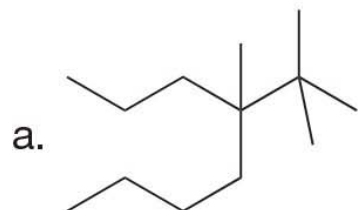
first substituent at C3

**Step 4: Combine the parts.**

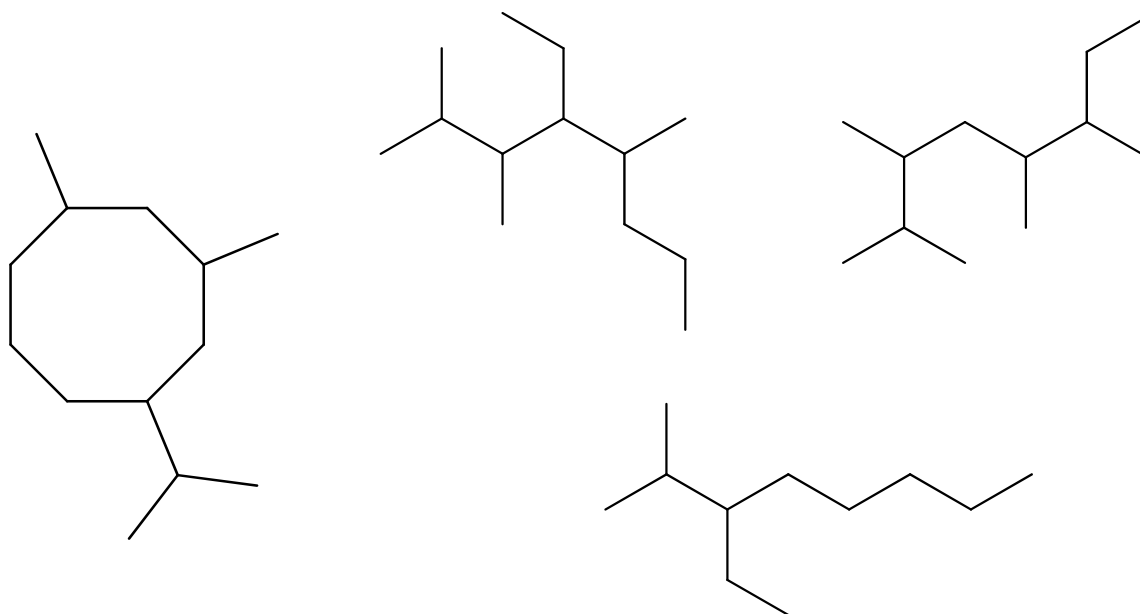
- Alphabetize: the **b** of **butyl** before the **m** of **methyl**

**Answer: 5-*tert*-butyl-3-methylnonane**

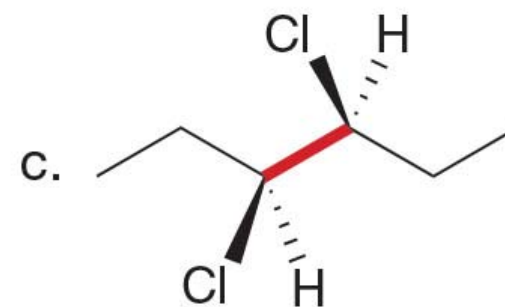
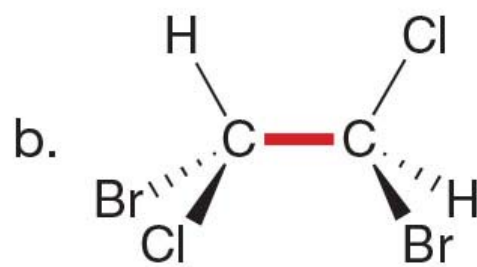
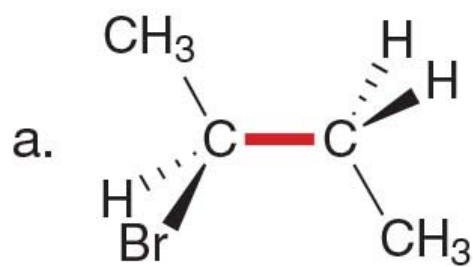
Give the IUPAC name for the following compounds.



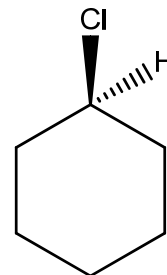
Give the IUPAC name for the following compounds.



Draw Newman projections



Draw the molecule in the two possible chair conformations showing the most stable one.



Draw the molecule in the two possible chair conformations showing the most stable one.

- *Isopropylcyclohexane*
- *1-tertbutyl-3-chlorocyclohexane (all possible isomers)*