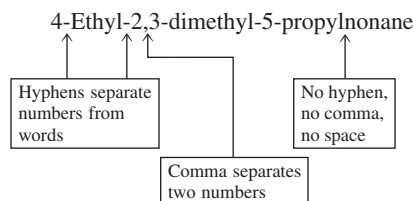


3-Ethyl-4,5-dipropyloctane

Numerical prefixes that designate numbers of alkyl groups, such as *di-*, *tri-*, and *tetra-*, are not considered when determining alphabetical priority for alkyl groups.

Note that the prefix *di-* does not affect the alphabetical order; *ethyl* precedes *propyl*.

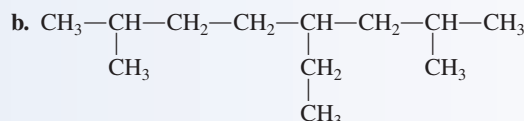
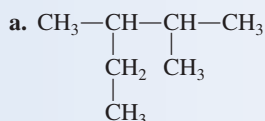
**Rule 6:** Follow IUPAC punctuation rules, which include the following: (1) Separate numbers from each other by commas. (2) Separate numbers from letters by hyphens. (3) Do not add a hyphen or a space between the last-named substituent and the name of the parent alkane that follows.



### EXAMPLE 12.2

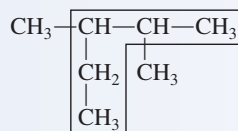
#### Determining IUPAC Names for Branched-Chain Alkanes

Give the IUPAC name for each of the following branched-chain alkanes.

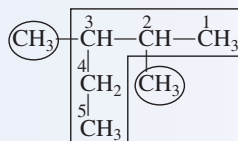


#### Solution

a. The longest carbon chain possesses five carbon atoms. Thus the parent-chain name is pentane.



This parent chain is numbered from right to left because an alkyl substituent is closer to the right end of the chain than to the left end.



There are two methyl group substituents (circled). One methyl group is located on carbon 2 and the other on carbon 3. The IUPAC name for the compound is 2,3-dimethylpentane.

b. There are eight carbon atoms in the longest carbon chain, so the parent name is octane. There are three alkyl groups present (circled).

