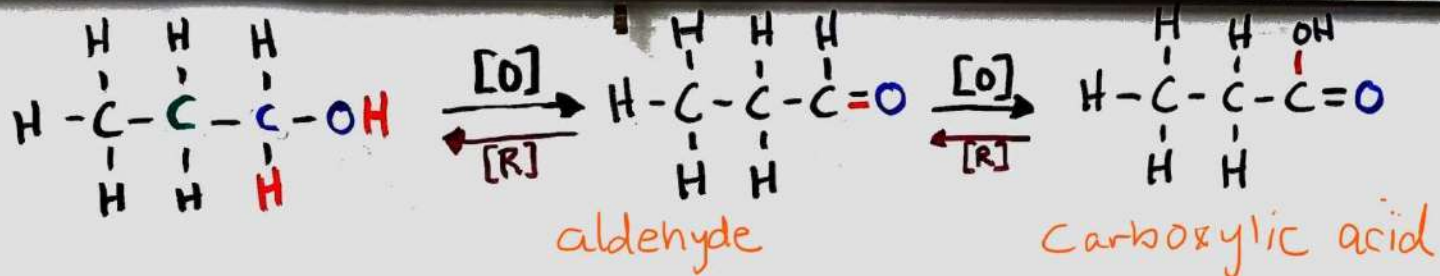
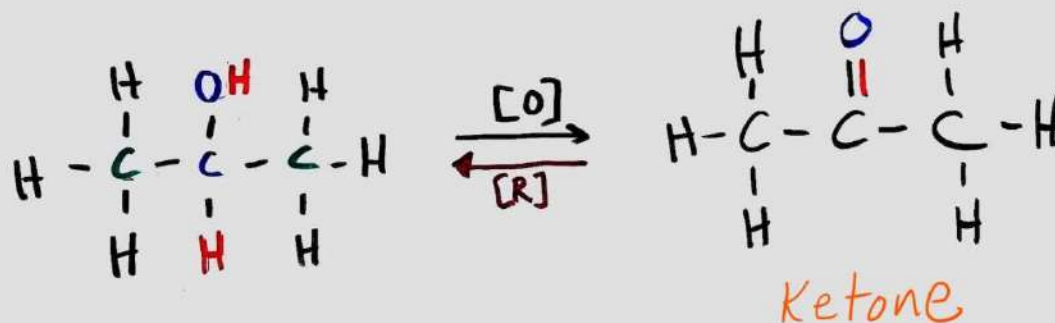


Alcohols and Phenols

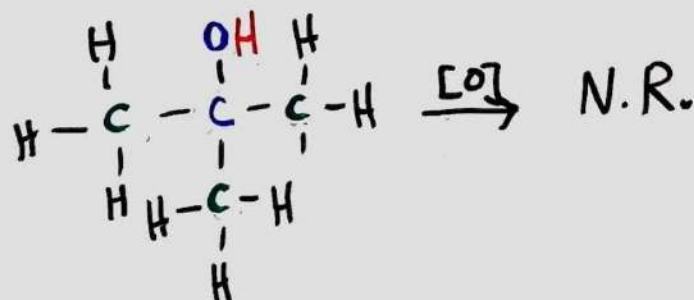
1°
alcohol
(primary)



2°
alcohol
(secondary)



3°
alcohol
(tertiary)



"C" = the alcohol carbon

"C" = a carbon attached to the alcohol carbon.

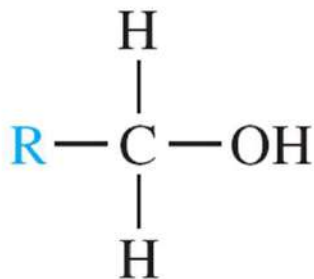
Alcohols

Alcohols are classified by the number of R groups (*i.e.* carbon atoms) attached to the hydroxyl carbon as shown here. Classification

primary (1°)

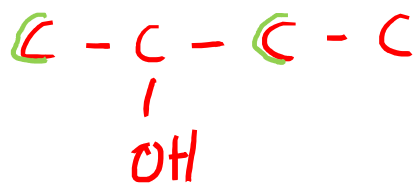


(OH is on the end)

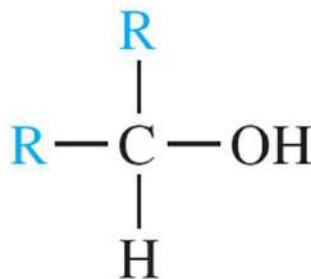


primary (1°)

Secondary (2°)

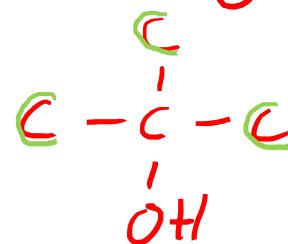


(OH in middle)

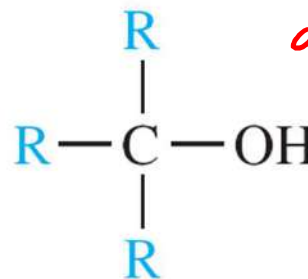


secondary (2°)

Tertiary (3°)

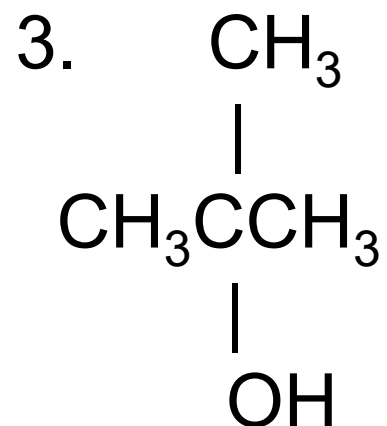
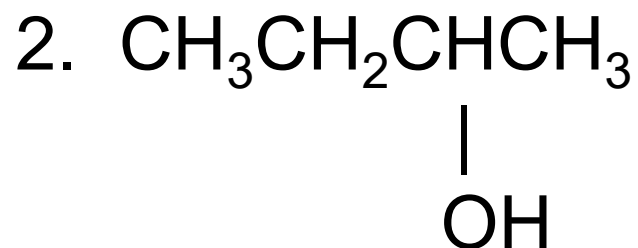
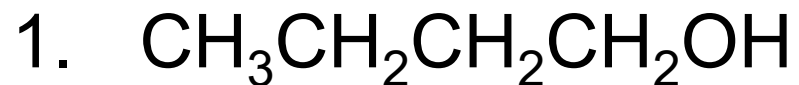


(OH in center boxed in ~~etc~~ by another carbon)

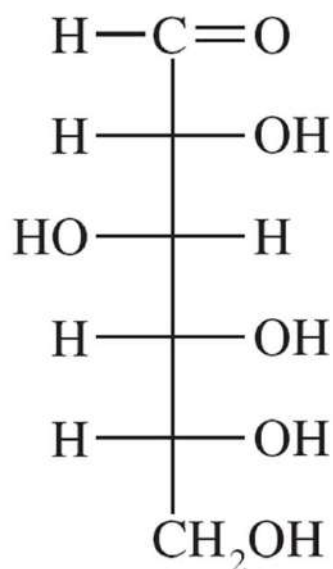


tertiary (3°)

Types of Alcohols



Alcohols with more than one –OH group are known as **polyhydroxy alcohols**. These include diols, triols, and carbohydrates like glucose.

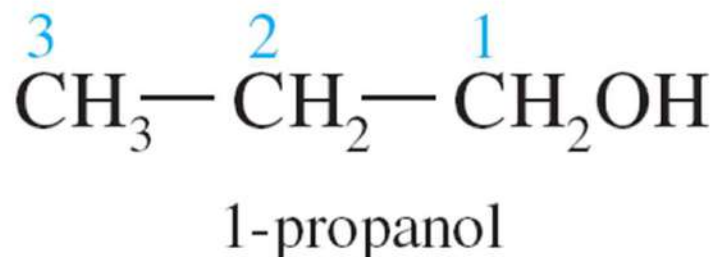


D-glucose
(a polyhydroxy alcohol)

IUPAC Rules for Naming Alcohols

1. Name the longest continuous carbon chain containing the hydroxyl group.
2. Drop an *-e* from the corresponding alkane parent name and add the suffix *-ol*.

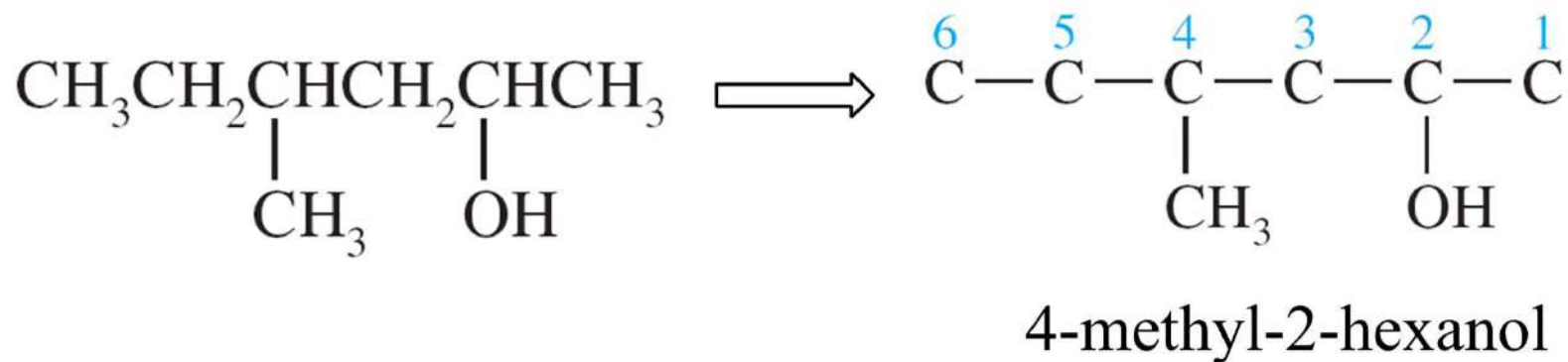
For example,

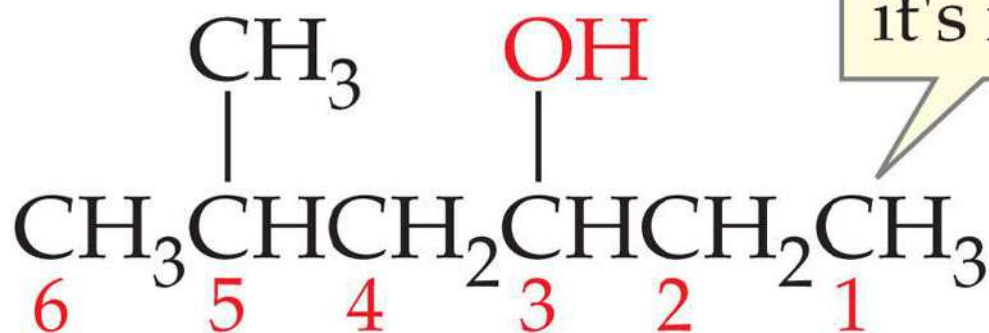


IUPAC Rules for Naming Alcohols

3. Carbon chains with three or more carbon atoms are numbered so the -OH group carbon atom is assigned the lowest possible number. This number is given as a prefix in the name.

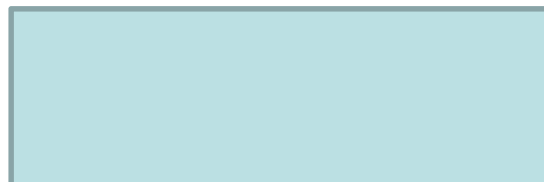
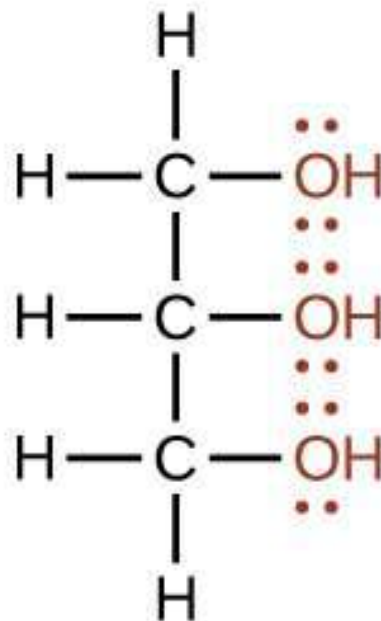
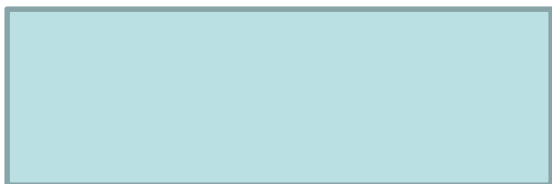
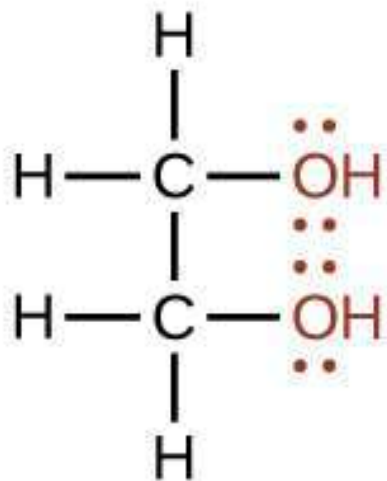
4. Attached groups are named and numbered as stated previously.



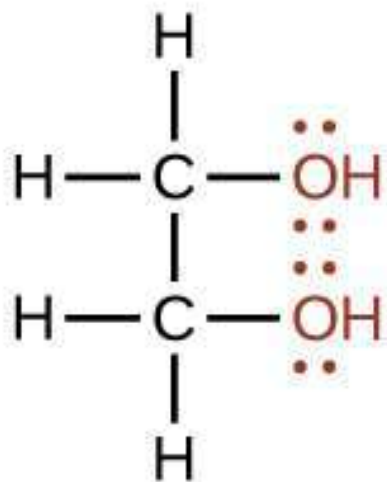


Begin at this end because it's nearer the - OH group.

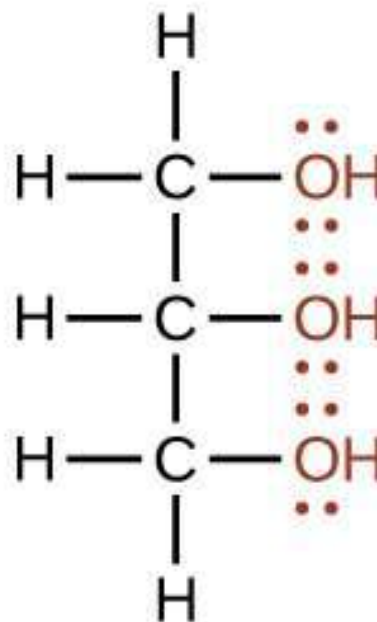
Naming Diols and Triols



Naming Diols and Triols



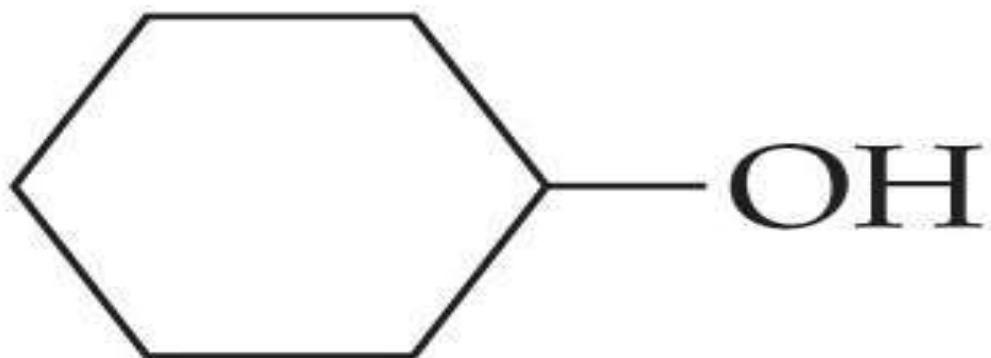
1,2-ethanediol



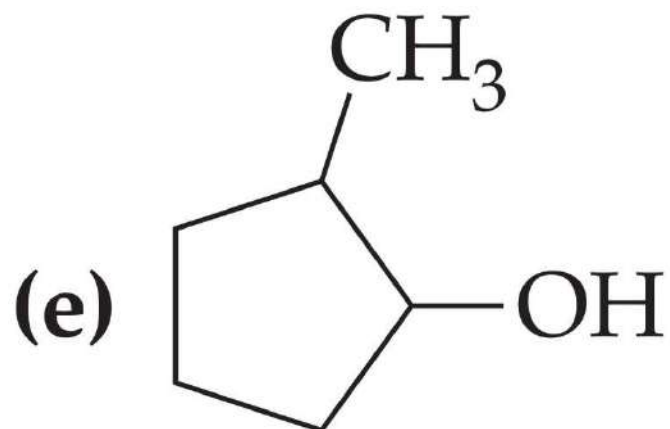
1,2,3-propanetriol

Naming Alcohols of Cycloalkanes

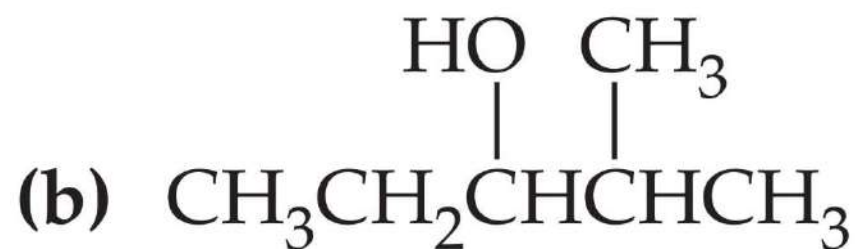
1. Because the -OH group is always on the number 1 carbon in a ring, the 1 is not shown in the name.



What's My Name

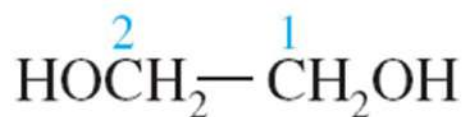
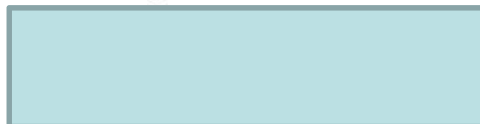
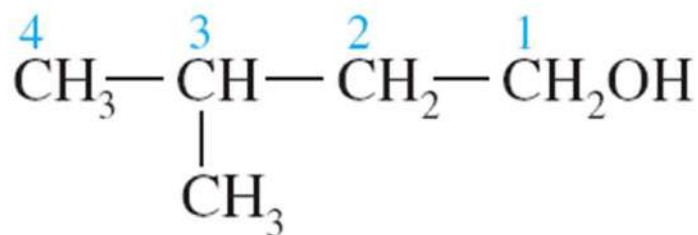
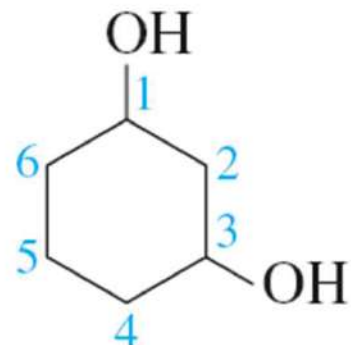
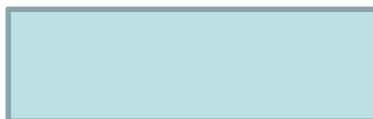
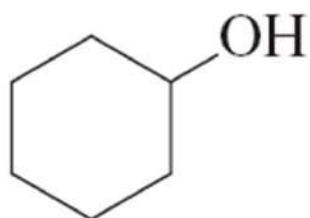
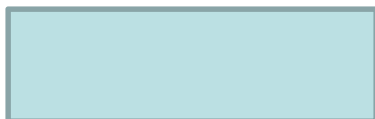
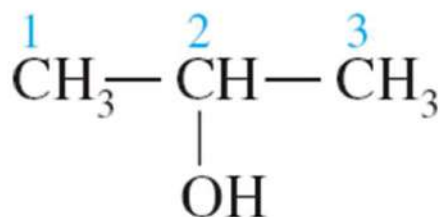


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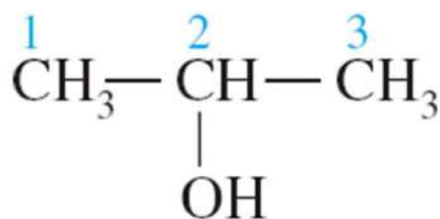


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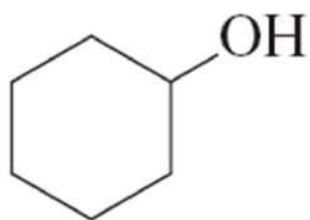
Other Examples of Naming Alcohols



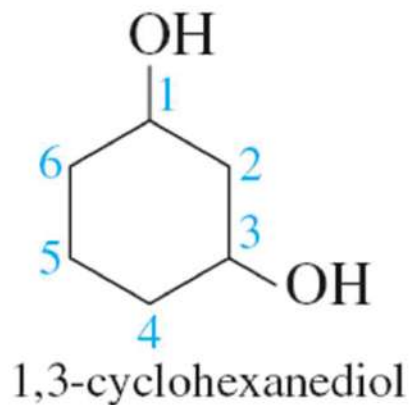
Other Examples of Naming Alcohols



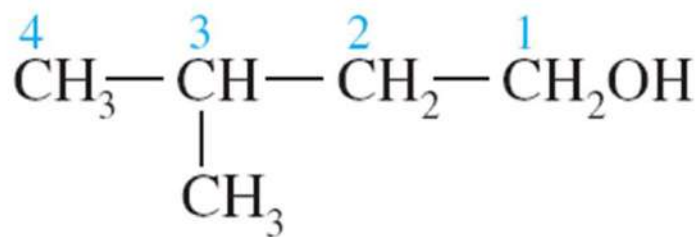
2-propanol



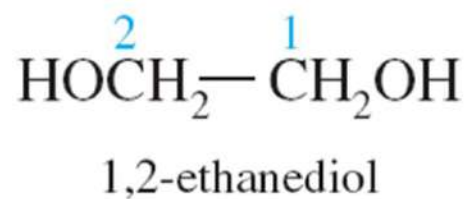
cyclohexanol



1,3-cyclohexanediol



3-methyl-1-butanol



1,2-ethanediol