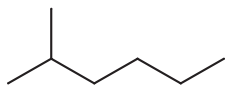


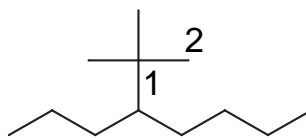
Alkanes Pg 68-74, 4th ed of Vollhardt and Schore



hexane

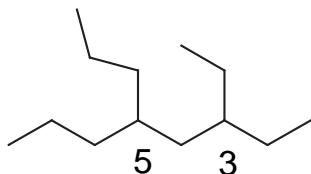


2-methylhexane

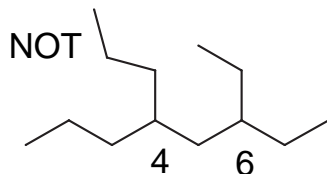


4-(1,1-dimethylethyl)octane
common: 4-(t-butyl)octane

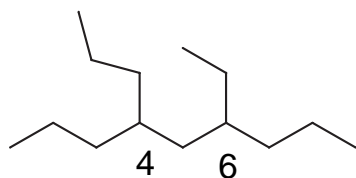
More than one branch point: First Point of difference



3-Ethyl-5-propyloctane

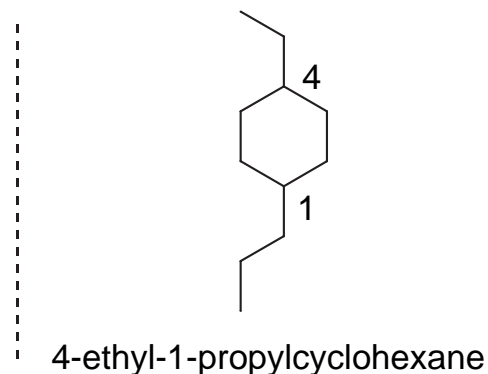
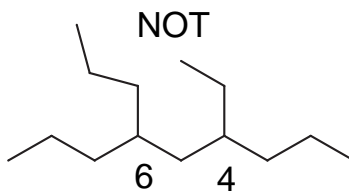


If equal distances: larger group gets priority



6-ethyl-4-propylnonane

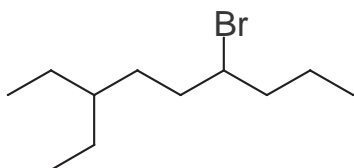
↑
name alphabetically



4-ethyl-1-propylcyclohexane

Haloalkanes Pg 73

Halides get the same priority as alkyls



6-Bromo-3-ethylnonane

Common names:

Alkyl halides

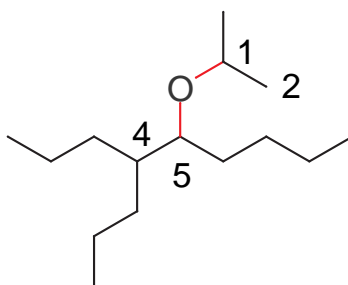


iodomethane (IUPAC)
methyl iodide (common)

Ethers: are named as alkoxyalkanes Pg 334-335



Ethoxyethane (IUPAC)
diethylether (common)

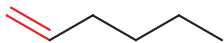


5-(1-methylethoxy)-4-propylnonane

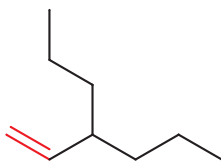
From this point on, the functional group with the highest priority defines C-1 of the parent chain

Alkenes: Pg 432-435

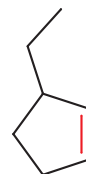
Find the longest chain with the functional group



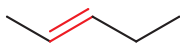
1-hexene



3-propyl-1-hexene
(even though there is a
heptyl chain)



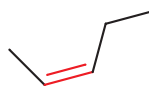
3-ethylcyclopentene



(*E*)-2-pentene

trans-2-pentene (common)

Entgegen: against



(*Z*)-2-pentene

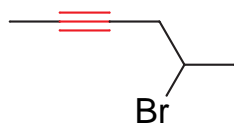
cis-2-pentene (common)

Zusammen: together

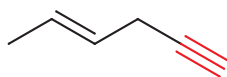
Substituents: alkenyl groups

Alkynes: Pg 534-535

Take priority over alkenes in naming



5-bromo-2-hexyne

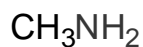


(*E*)-4-hexen-1-yne

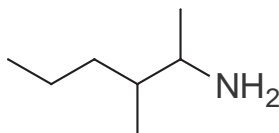
Substituents are referred to as *alkynyl* groups

Amines: Alkanamines if the amine has priority; otherwise amino

Pg 924-925



Methanamine

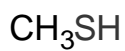


3-methyl-2-hexanamine

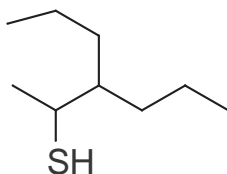
Thiols and sulfides:

Pg 351

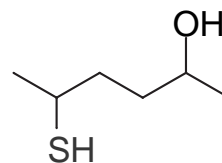
thiol, if highest priority
as a substituent, *mercapto*



Methanethiol

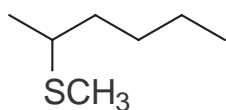


3-propyl-2-hexanethiol



5-mercapto-2-hexanol

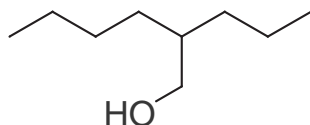
sulfides are named as thioalkyl groups



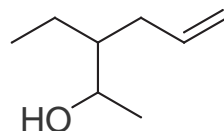
2-thiomethylhexane

Alcohols Pg 277-278

Find the longest chain with an OH group



2-propyl-1-hexanol

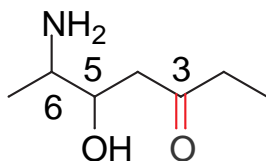


3-ethyl-5-hexen-2-ol

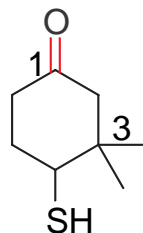
if lower priority, substituents are called hydroxy groups

Ketones Pg 722-724

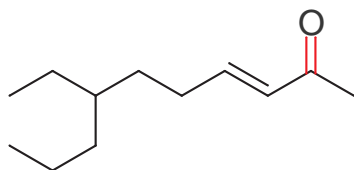
Named as alkanones; if another group has priority, then it is called "oxo"



6-amino-5-hydroxy-3-heptanone



3,3-dimethyl-4-mercaptocyclohexanone

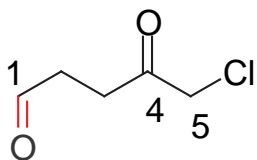


(E)-7-ethyl-3-decen-2-one

Aldehydes Pg 722-724

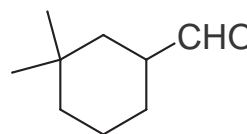
Named as alkanals.

- If another group has priority, then it is named as an "oxo" group

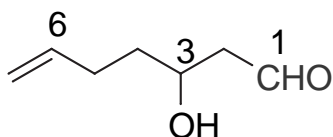


5-chloro-4-oxopentanal

Cyclic aldehydes are named as cycloalkanecarboxaldehydes



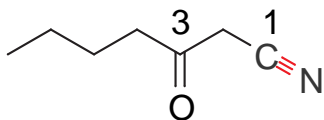
3,3-dimethylcyclohexanecarboxaldehyde



3-hydroxy-6-heptenal

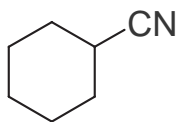
Nitriles Pg 890-891

- Named as "Alkanenitriles"; The nitrile carbon is C-1 of the parent chain.
- If another group has priority, then it is named as a "cyano" group

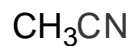


3-oxoheptanenitrile

Cyclic nitriles are named as cycloalkanecarbonitriles



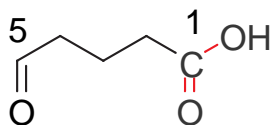
cyclohexanecarbonitrile



ethanenitrile
common: "acetonitrile"

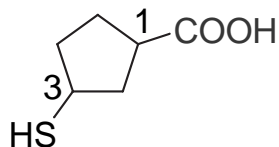
Carboxylic Acids Pg 890-891

- Named as alkanolic acids. Diacids are alkanedioic acids

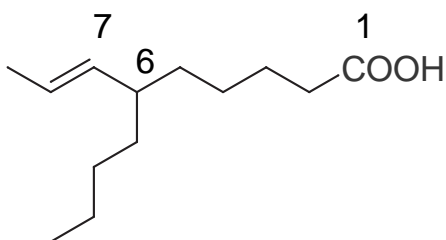


5-oxopentanoic acid

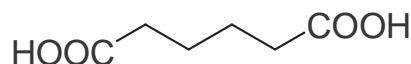
Cyclic acids are named as cycloalkanecarboxylic acids



3-mercaptocyclopentanecarboxylic acid



(E)-6-butyl-7-nonenic acid

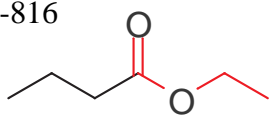


hexanedioic acid

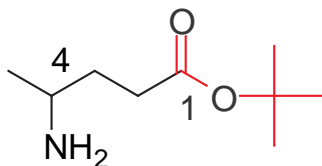
Esters and Amides

- Named as alkyl alkanoates and alkanamides, respectively

Pg 814-816

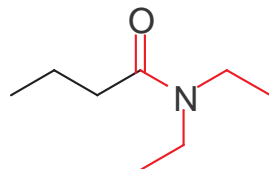


Ethyl butanoate

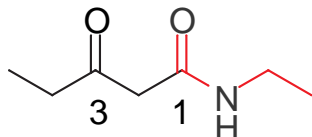


1,1-dimethylethyl 4-aminopentanoate

Pg 882-883



N,N-diethyl butanamide



N-ethyl 3-oxopentanamide

Getting Your Priorities Straight:

Acid > ester > amide > nitrile > aldehyde > ketone > alcohol > thiol > amine

highest

lowest