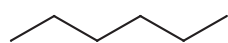
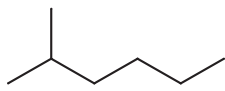


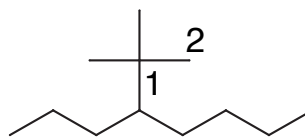
**Alkanes** Pg ~~68-74~~ <sup>71-76</sup> 4th ed of Vollhardt and Schore  
~~6th~~



hexane

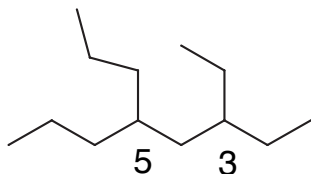


2-methylhexane

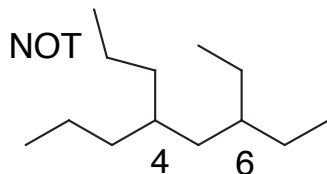


4-(1,1-dimethylethyl)octane  
 common: 4-(t-butyl)octane

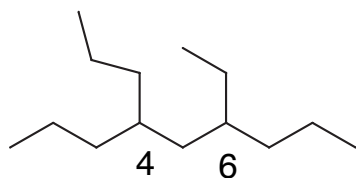
More than one branch point: First Point of difference



3-Ethyl-5-propyloctane

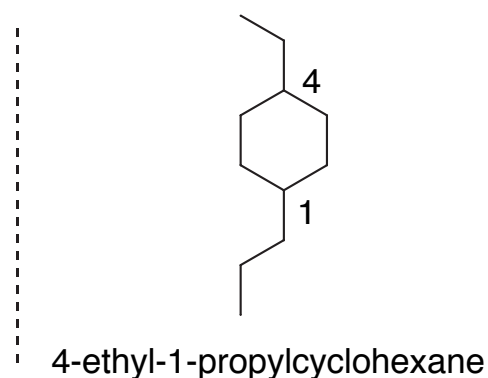
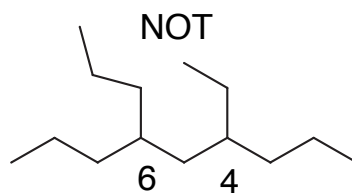


If equal distances: larger group gets priority



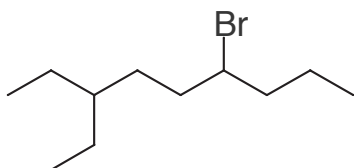
6-ethyl-4-propylnonane

↑  
 name alphabetically



**Haloalkanes** Pg ~~73~~ <sup>76</sup>

Halides get the same priority as alkyls



6-Bromo-3-ethylnonane

Common names:

Alkyl halides

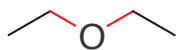


iodomethane (IUPAC)  
 methyl iodide (common)

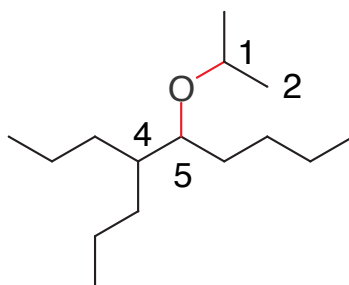
**347-348**

**Ethers: are named as alkoxyalkanes**

Pg ~~334-335~~



Ethoxyethane (IUPAC)  
diethylether (common)

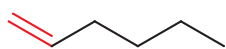


5-(1-methylethoxy)-4-propylnonane

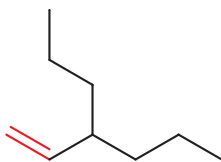
**From this point on, the functional group with the highest priority defines C-1 of the parent chain**

**Alkenes:** Pg ~~432-435~~ **446-449**

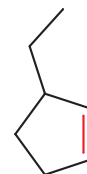
Find the longest chain with the functional group



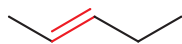
1-hexene



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



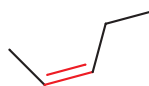
3-ethylcyclopentene



(*E*)-2-pentene

*trans*-2-pentene (common)

Entgegen: against



(*Z*)-2-pentene

*cis*-2-pentene (common)

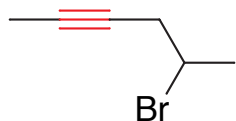
Zusammen: together

Substituents: alkenyl groups

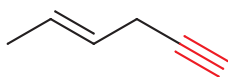
568

**Alkynes:** Pg ~~554-555~~

Take priority over alkenes in naming



5-bromo-2-hexyne

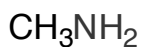


(E)-4-hexen-1-yne

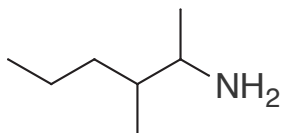
Substituents are referred to as *alkynyl* groups

**Amines:** Alkanamines if the amine has priority; otherwise amino

Pg ~~924-925~~ 972-973



Methanamine

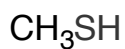


3-methyl-2-hexanamine

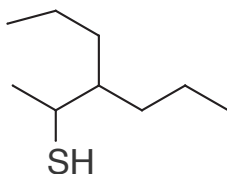
**Thiols and sulfides:**

Pg ~~351~~ 365

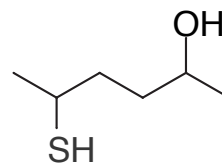
*thiol*, if highest priority  
as a substituent, *mercapto*



Methanethiol

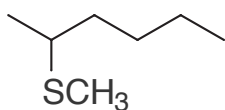


3-propyl-2-hexanethiol



5-mercapto-2-hexanol

*sulfides* are named as thioalkyl groups

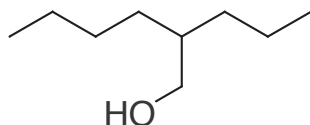


2-thiomethylhexane

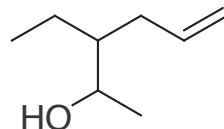
**288-289**

**Alcohols** Pg ~~277-278~~

Find the longest chain with an OH group



2-propyl-1-hexanol

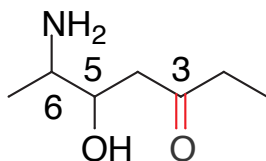


3-ethyl-5-hexen-2-ol

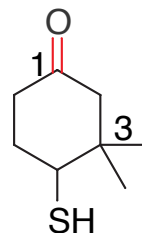
if lower priority, substituents are called hydroxy groups

**Ketones** Pg ~~722-724~~ **776-778**

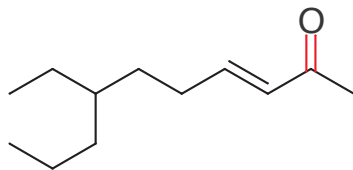
Named as alkanones; if another group has priority, then it is called "oxo"



6-amino-5-hydroxy-3-heptanone



3,3-dimethyl-4-mercaptocyclohexanone

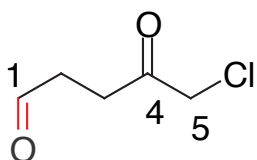


(E)-7-ethyl-3-decen-2-one

## Aldehydes Pg ~~722-724~~ **776-778**

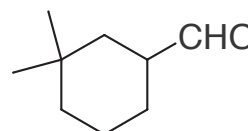
Named as alkanals.

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

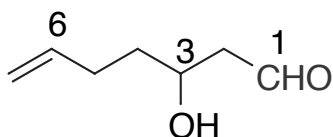


5-chloro-4-oxopentanal

*Cyclic aldehydes are named as cycloalkanecarboxaldehydes*



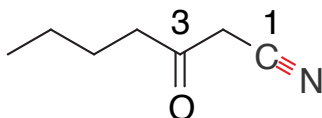
3,3-dimethylcyclohexanecarboxaldehyde



3-hydroxy-6-heptenal

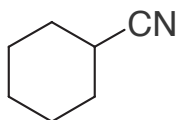
## Nitriles Pg ~~890-891~~ **954**

- 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

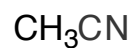


3-oxoheptanenitrile

*Cyclic nitriles are named as cycloalkanecarbonitriles*



cyclohexanecarbonitrile



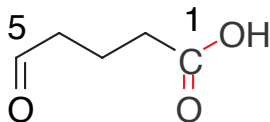
ethanenitrile  
common: "acetonitrile"

872-873

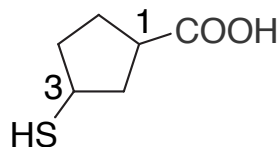
Carboxylic Acids Pg ~~890-891~~

- Named as alkanolic acids. Diacids are alkanedioic acids

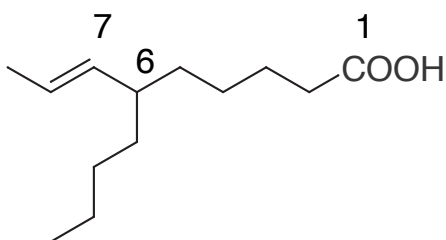
*Cyclic acids are named as cycloalkanecarboxylic acids*



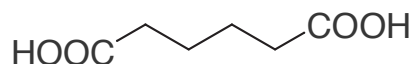
5-oxopentanoic acid



3-mercaptocyclopentanecarboxylic acid



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



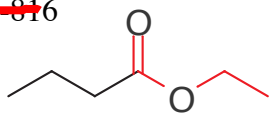
hexanedioic acid

Esters and Amides

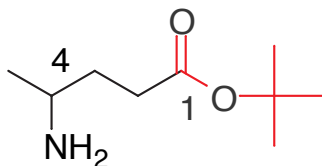
944-947

- Named as alkyl alkanoates and alkanamides, respectively

~~Pg 814-816~~

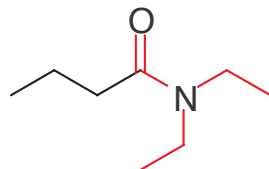


Ethyl butanoate

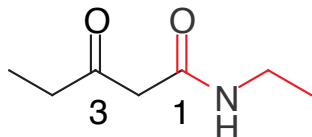


1,1-dimethylethyl 4-aminopentanoate

~~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