Hoofdstuk 6

Koolwaterstoffen : alleen C met H

Belangrijk : C-keten

alleen C – C
↑
enkele binding

ALKANEN
=

- C – C – C – C – C onvertakt
- C – C(C) – C – C vertakt
  C

1 x C = C
↑
dubbele binding

ALKENEN
=

- C = C – C – C onvertakt
- C = C – C vertakt
  C

maken C_3H_8 enkele binding algemeen: C_nH_{2n+2} verzadigd.

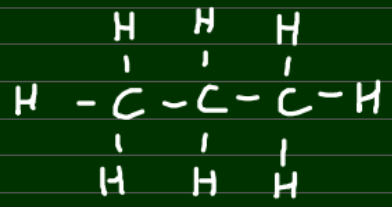
ALKAAN

C_3H_6 dubbele binding. " : C_nH_{2n} onverzadigd.

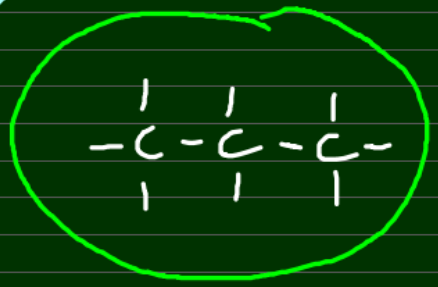
ALKEEN

C_5H_{10} ALLE mogelijkheden → ISOMEREN

C_3H_8:

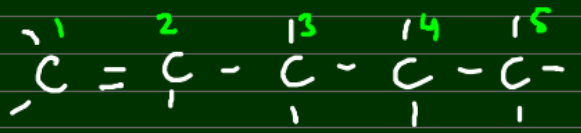


$CH_3-CH_2-CH_3$



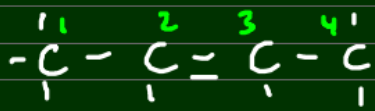
zelfde molecuulformule

andere structuurformule

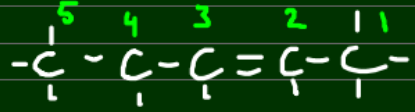


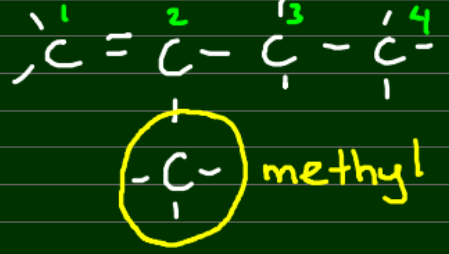
1e C-atoom

pent - 1 - een



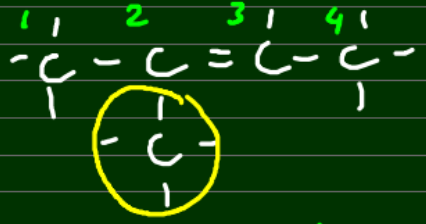
pent - 2 - een



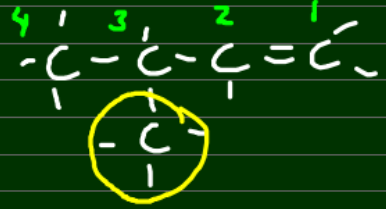


2 - methyl but - 1 - een

methyl



2 - methyl but - 2 - een



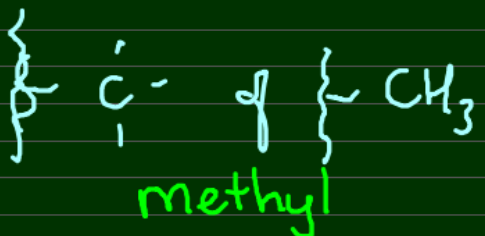
uitgang laagste nummer!

3 - methyl but - 1 - een

Aantal C-atomen in hoofdketen (→ langste overtakte keten)

1	meth	mijn	ma
2	eth	ezel	en
3	prop	poept	pa
4	but	bovenop	blowen
5	pent	peters	perfecte
6	hex	hoofd	hasj

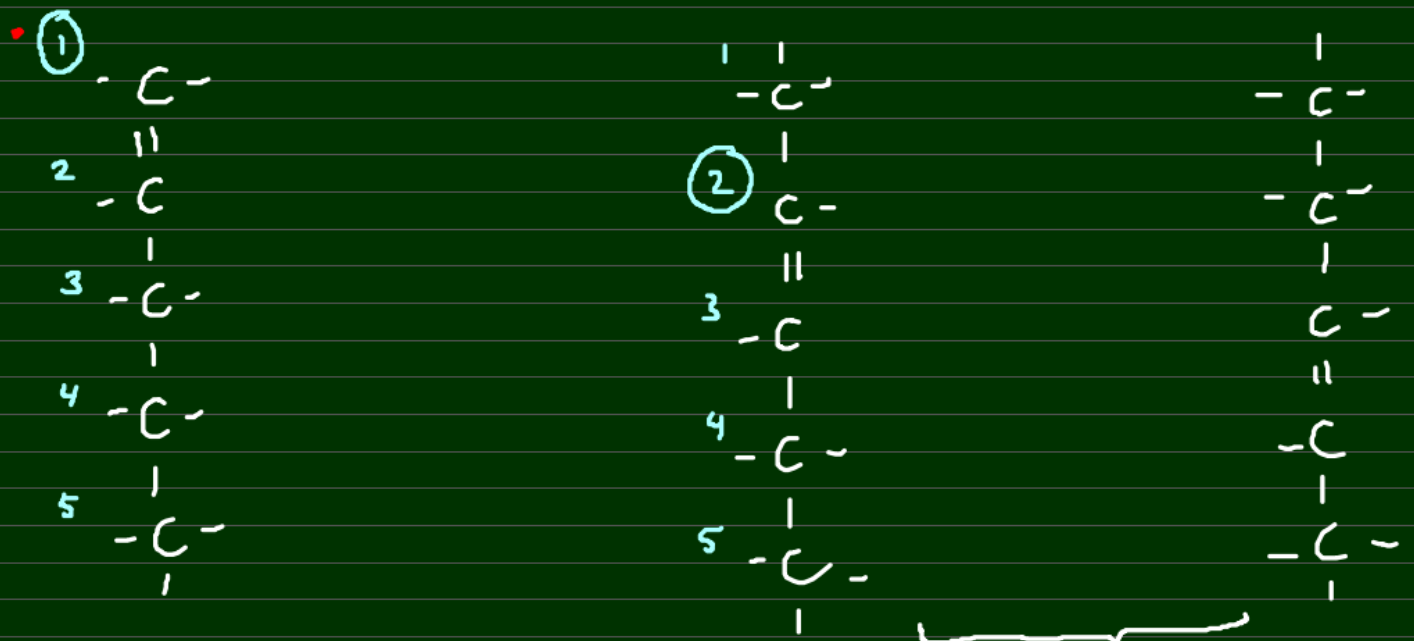
66D. aan een bij C-C C=C zijtak



plaats van de C=C en de zijtak (CH_3) aangeven met een nummer (indien nodig)

§

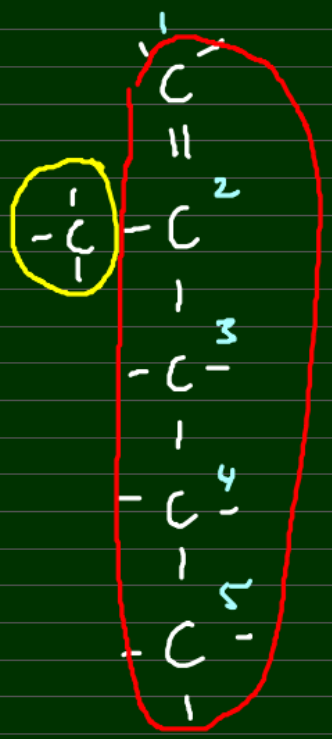
opgaven § 6.1 (12 al gedaan)

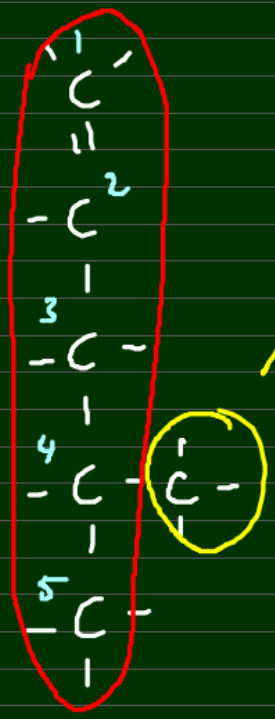


pent-1-een

zelfde

pent-2-een





1 C zijtak

methyl

in plaats van methyl (CH_3)

ook mogelijk:

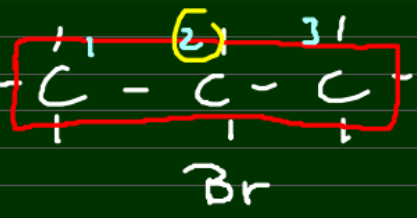
F

Cl

Br

I

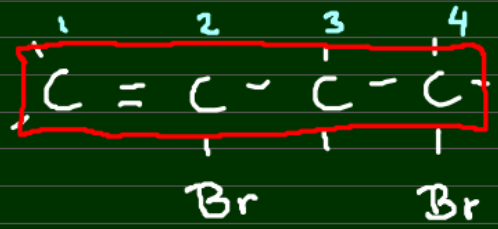
vb



2-methyl-pent-1-een

4-methyl pent-1-een

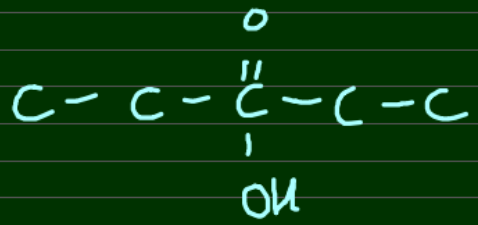
2-broompropaan



C-C=C-C

2,4-dibroombut-1-een

2x



naamgeving

↑ zo laag mogelijk

(nummer) zijgroep hoofdketen (nummer) uitgang

zijgroep	hoofdketen	uitgang
methyl	meth	-aan
'halogeen'	⋮	-een (C=C)
	hex	

Aan de hoofdketen: -OH → -ol

alleen C-C

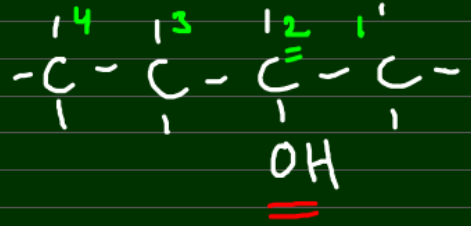
- NH_2 → -amine

- $-C(=O)-OH$ → -zuur

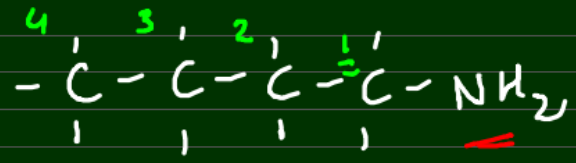
wordt als uitgang genoemd

behoort bij hoofdketen

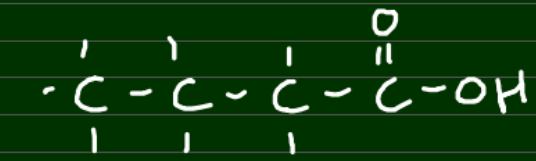
ALTIJD nr 1.



butaan-2-ol



butaan-1-amine



butaanzuur

b.3. Reacties alkanen en alkenen

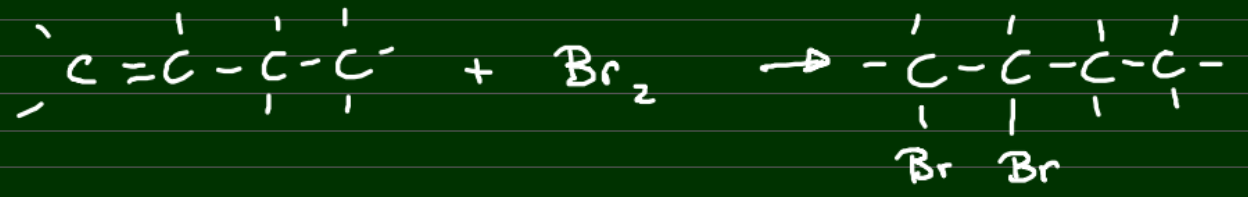
1. verbranden
   "volledig" → er ontstaat CO_2
   "onvolledig" → " " CO

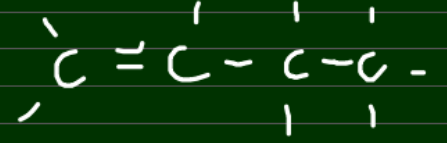
vb $2\,C_8H_{18} + 25\,O_2 \rightarrow 16\,CO_2 + 18\,H_2O$

2. substitutiereactie (vervangingsreactie : H-atoom → halogeenatoom)

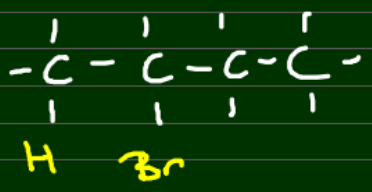
1-broompropaan

3. additiereactie (toevoegingsreactie : ALLEEN BIJ ALKENEN)
   ↳ C=C wordt C-C ▽ en 1 product .

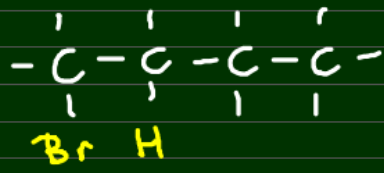




+ HBr →

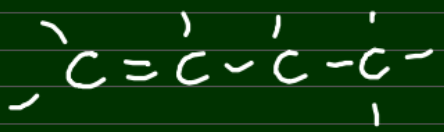


2-broombutaan

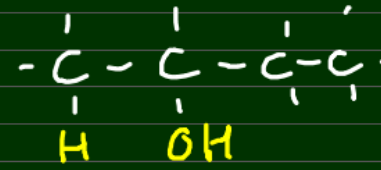


1-broombutaan.

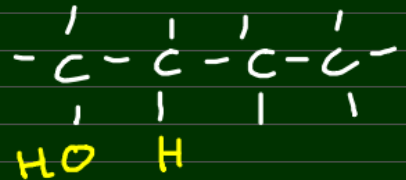
met water: H - OH



+ H-OH →

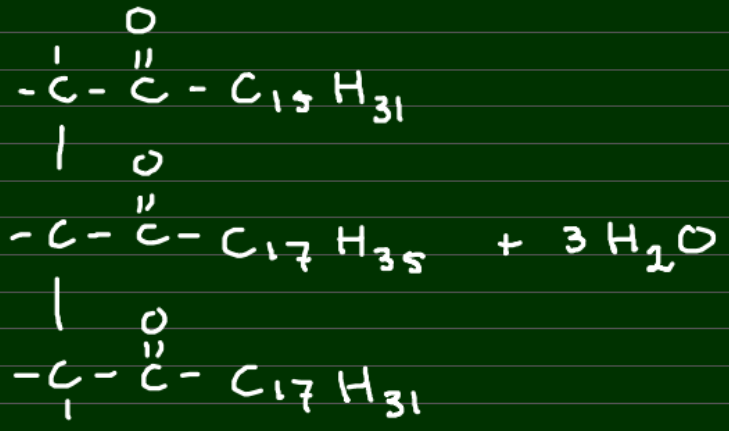


butaan-2-ol

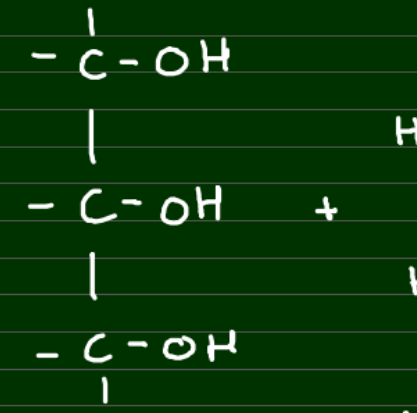


butaan-1-ol

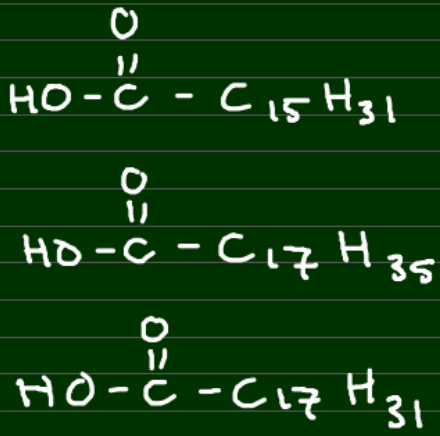
6.4 alcohol + zuur $\underset{\text{hydrolyse}}{\overset{\text{condensatie}}{\rightleftharpoons}}$ ester + water



olie



glycerol

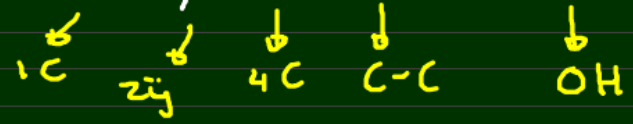


vetzuren

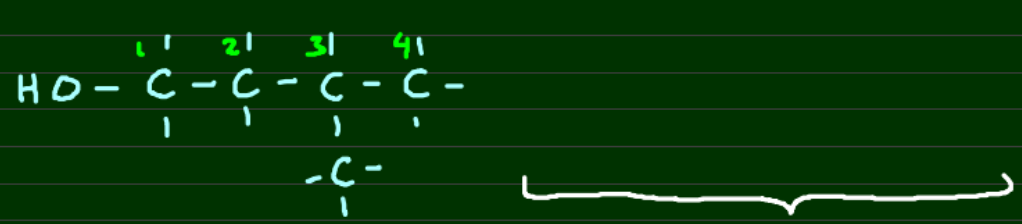
6762

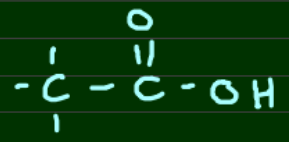
Practicum ester.

3-methylbutaan-1-ol

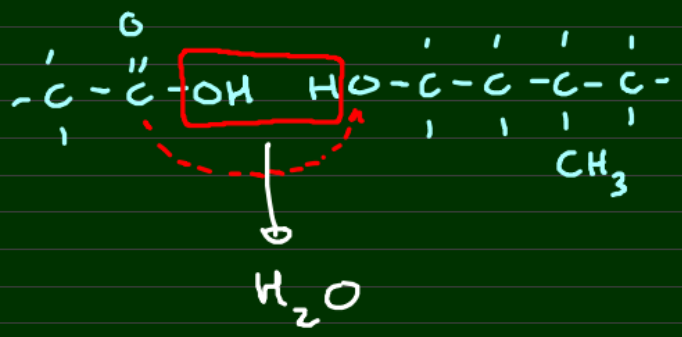


ethaanzuur

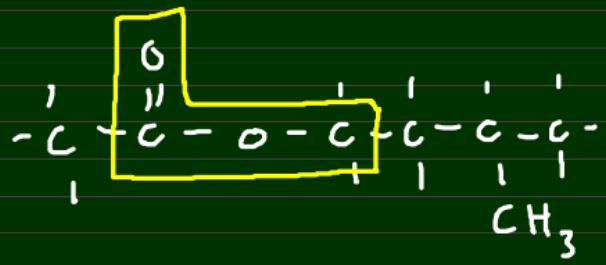




Klad:



toets:



alcohol + zuur $\underset{\text{hydrolyse}}{\overset{\text{condensatie}}{\rightleftharpoons}}$ ester + water

- omkeerbare reactie

$$N_2O_4\,(g) \underset{S_2}{\overset{S_1}{\rightleftharpoons}} 2\,NO_2\,(g)$$

kl. loos. — bruin

verwarmen: wordt bruiner → NO_2 wordt meer : $S_1 > S_2$

afkoelen: " lichter → NO_2 verdwijnt : $S_2 > S_1$

constante temp: geen kleurverandering : $S_1 = S_2$

EVENWICHT

let op $S_1 \neq 0$ en $S_2 \neq 0$