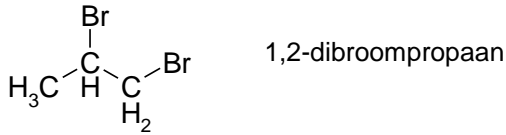


### Oefenvraagstukken hoofdstuk 3

#### Opgave 1

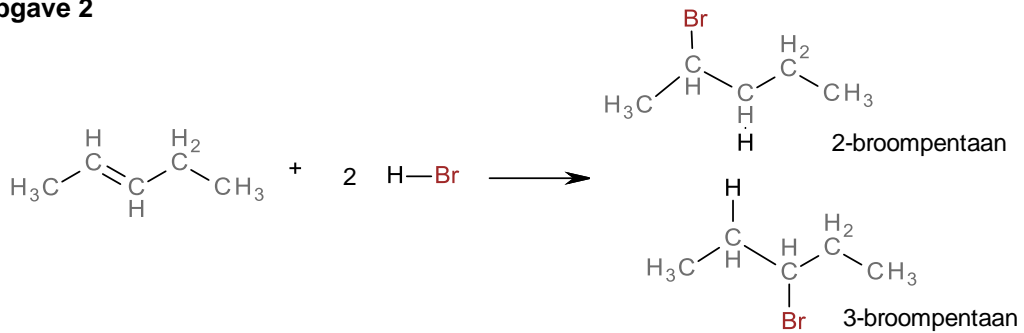
- 1  $C_3H_6 + Br_2 \rightarrow C_3H_6Br_2$   
2



- 3 Additiereactie. Er verdwijnt een dubbele binding door "toevoeging" van twee broomatomen.

#### Opgave 2

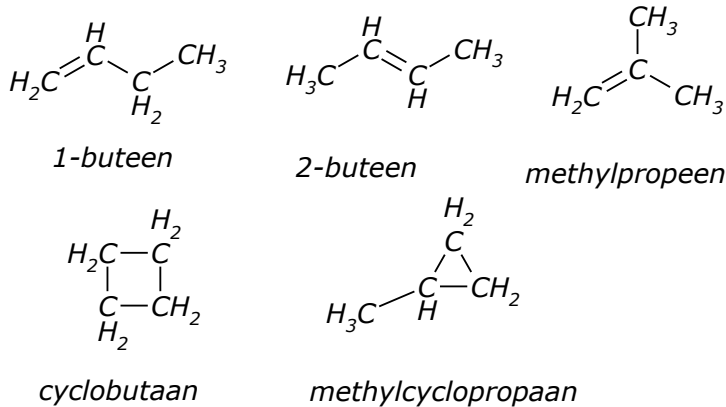
4



- 5 Het Br atoom kan zowel aan het tweede als het derde C atoom adderen:  
6 Nee, want de additie van een Br atoom aan het tweede of derde C atoom levert hetzelfde molecuul op, namelijk 2-broombutaan.

#### Opgave 3

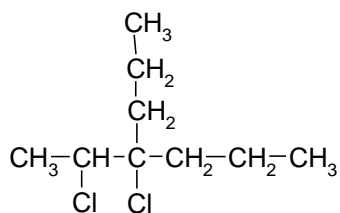
7



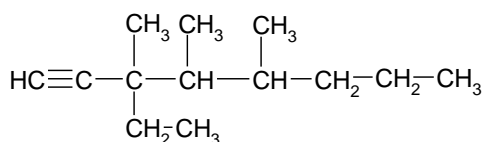
- 8 Het kookpunt van butaan is hoger dan dat van methaan omdat butaan een groter molecuul is. De Vanderwaalskrachten zijn dus groter; het kost meer energie om deze bij butaan te verbreken dan bij methaan.  
9 Het kookpunt van butaan is hoger dan dat van methylpropan ondanks dezelfde molecuulformule, omdat methylpropan vertakt is. Methylpropanmoleculen zijn minder goed te stapelen in het molecuulrooster, waardoor ze verder van elkaar af zitten. Hierdoor zijn de vanderwaalskrachten kleiner dan bij butaan.

### Opgave 4

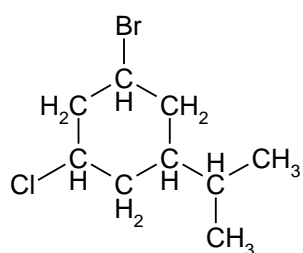
10



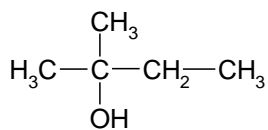
11



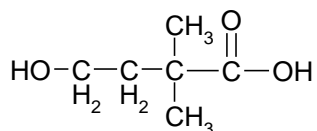
12



13



14



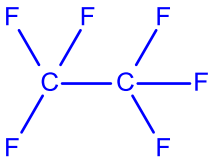
### Opgave 5

- 15
- a 2,2,3-trichloorpentaaan
  - b 2-hydroxypropaanzuur
  - c 2,3-butaandiol
  - d 5-broom-6-ethyl-1,3-cyclohexadien
  - e 1,3-dibroom-2-penteen
  - f 3-chloor-1-pentyn
  - g 3-ethyl-5-(1methylethyl)octaan
  - h 3-ethylpentyn
  - i 5-broom-6-methyl-1,3-cyclohexadien
  - j 2-amino-3-methylbutaanzuur
  - k 2-propanol
  - l 2,4-hexadien-1-amine
  - m 3-broom-4-(1methylethyl)-1,5-hexadiyn
  - n 2,5-dimethyl-3-ethylhexaan

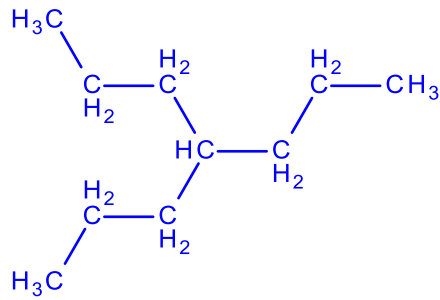
Extra vraagstukken hoofdstuk 3 KOOLSTOFVERBINDINGEN 4-VWO

1

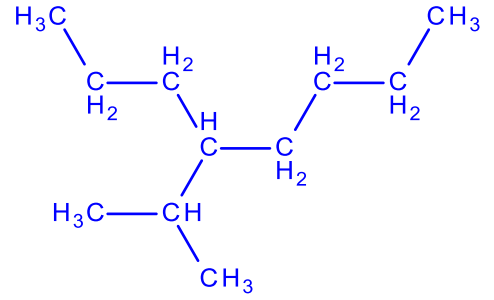
a



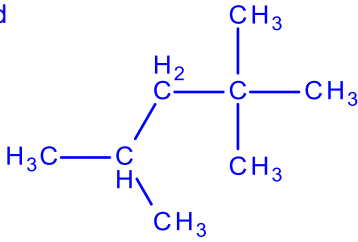
b



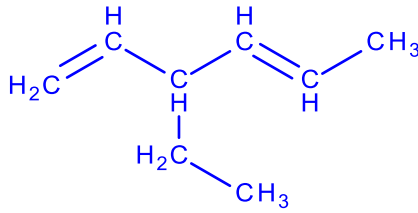
c



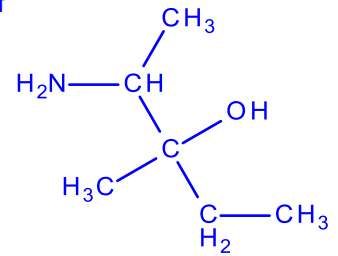
d



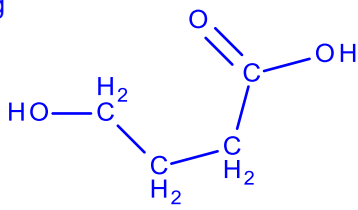
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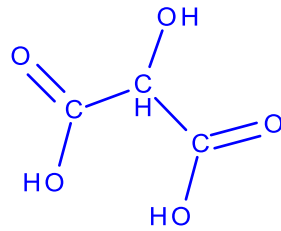
f



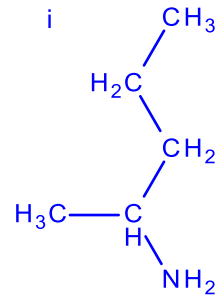
g



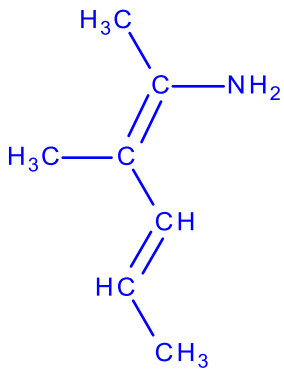
h



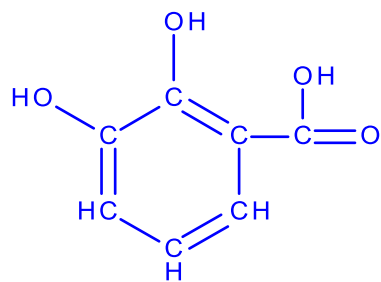
i



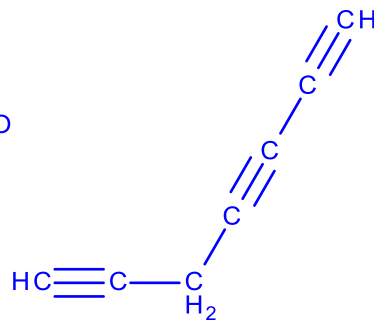
j



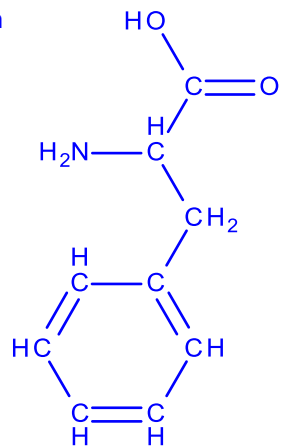
k

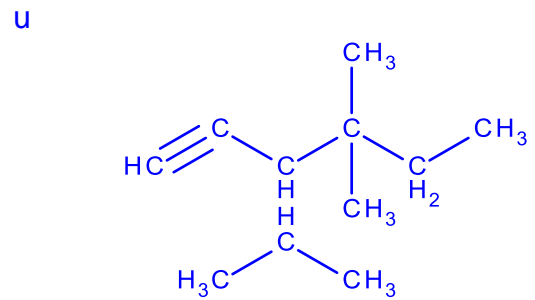
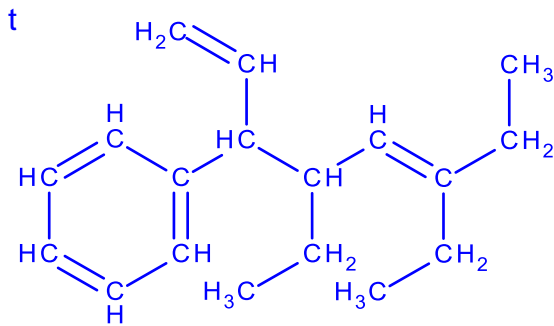
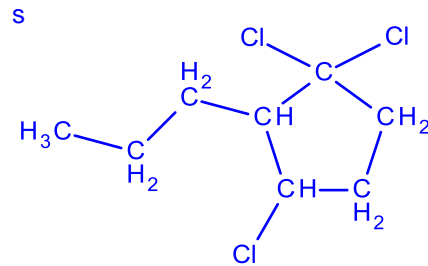
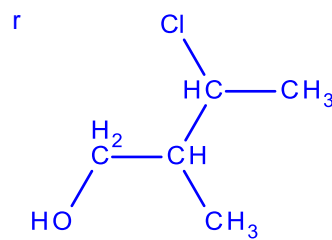
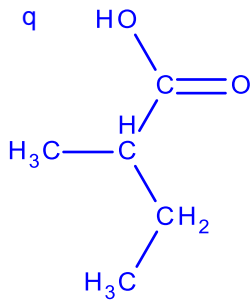
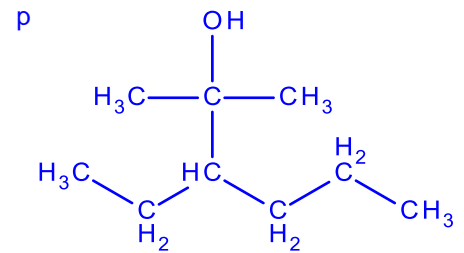
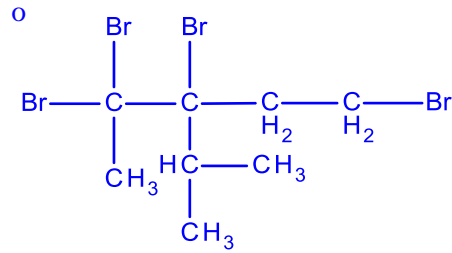
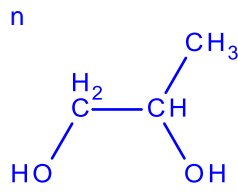


l

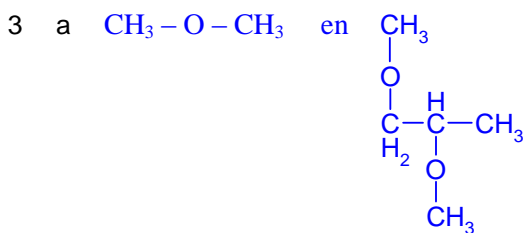


m





- 2
- a 2,2,3,3-tetrachloropentane
  - b hexaan-1,6-diamine
  - c butaanzuur
  - d 3-ethyl-2,5-dimethyl-hexaan
  - e 3-aminobutaanzuur
  - f 3,4,6-trimethyl-2-hepteen
  - g 2,2-dimethylbuteenzuur
  - f 1,4-hexadien
  - i 1,2,3-butaantriol
  - j 3-methyl-2,4-hexadiece-1-amine
  - k 1,4,5,5-tetrabroom-2-ethyl-cyclopenta-1,3-dieen
  - l 1,1,2-trifenyl-3-methyl-1-hepteen



- b 1,1-dimethoxypropan en methoxyetheen
- c 1,1-dimethoxypropan omdat dit het grootste molecuul en bovendien vertakt is.