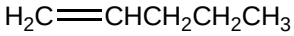
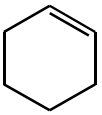
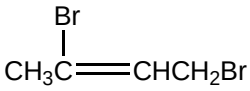
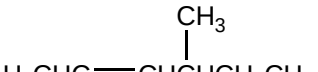
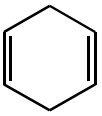
CAPITOLO 3

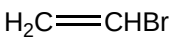
1. a) 

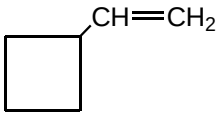
b) 

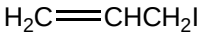
c) 

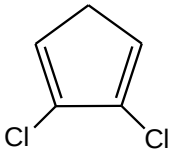
d) 

e) 

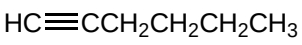
f) 

g) 

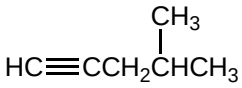
h) 

i) 

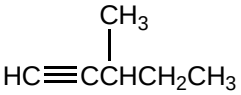
2.



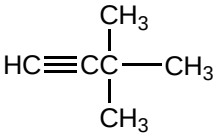
1-esino



4-metil-1-pentino

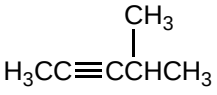


3-metil-1-pentino

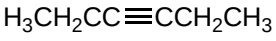


3,3-dimetil-1-butino

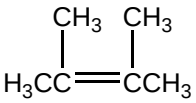
2-esino

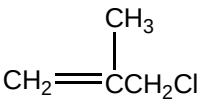


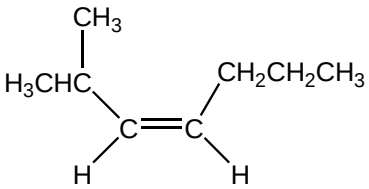
4-metil-2-pentino

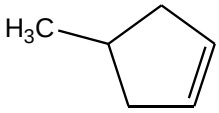


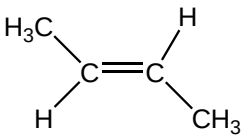
3-esino

3. a) 

b) 

c) 

d) 

e) 

4. a) 2-pentene. La numerazione comincia dall'estremità della catena più vicina al doppio legame.

b) 2-pentene. Il metile in 1 non è un sostituente ma fa parte della catena principale a 5 atomi di carbonio.

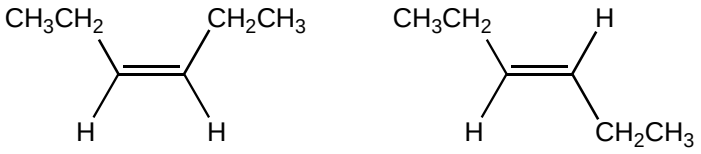
c) 1-metilcicloesene. Il carbonio che porta il sostituente deve avere il numero più basso possibile.

d) 2-metil-1-butene. La catena più lunga è a 4 atomi di carbonio.

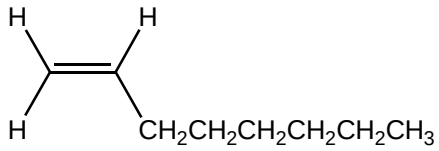
e) 1-penten-3-ino. L'alchino ha priorità di nomenclatura sull'alchene.

f) 1-buten-3-ino. L'alchino ha priorità di nomenclatura sull'alchene.

5. a)

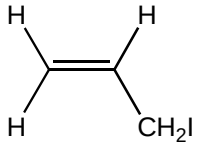


b)

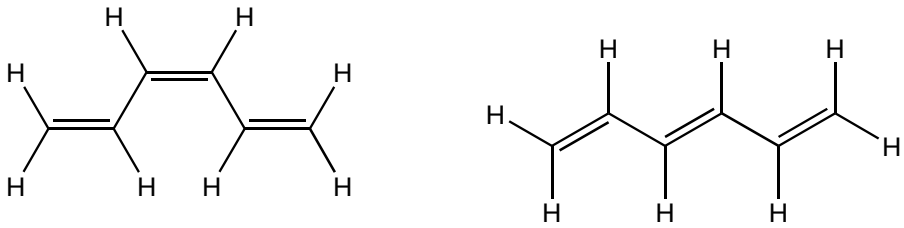


c)

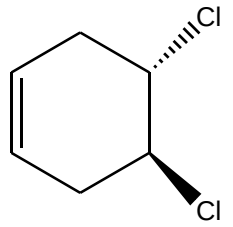
d)



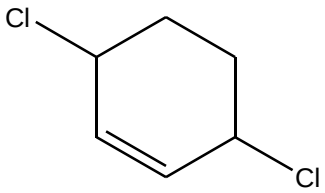
e)



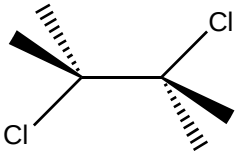
f)

6. a) 

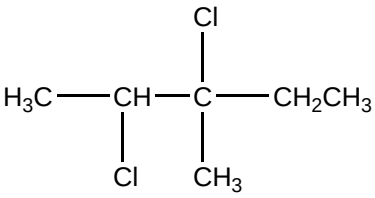
4,5-diclorocicloesene

b) 

3,6-diclorocicloesene

c) 

2,3-dicloro-2,3-dimetilbutano

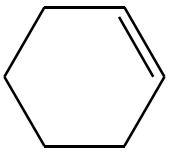
d) 

2,3-dicloro-3-metilpentano

7. a) $CH_3CH{=}CHCH_3 + Br_2$

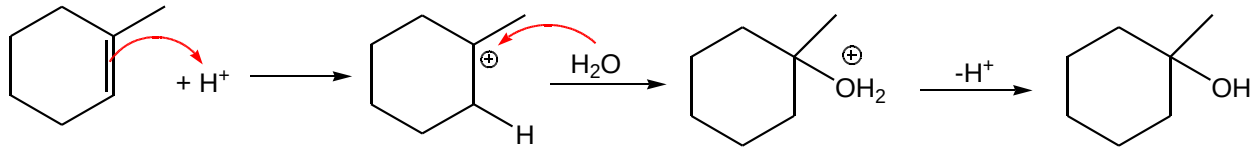
b) $CH_3CH{=}CH_2 + H_2SO_4$

c) $(CH_3)_2C{=}CH_2 + H_2O/H^+$ N.B. nel testo dell'esercizio manca il pedice 3 a (CH_3)

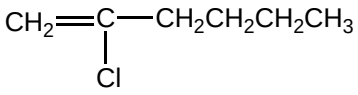
d)  + HCl

e) $CH_2{=}CHCH{=}CH_2 + HCl$

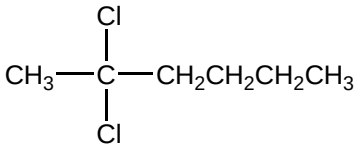
8.



9.

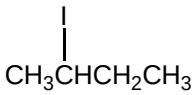


2-cloro-es-1-ene

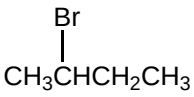


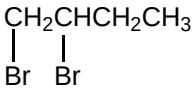
2,2-dicloroesano

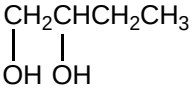
10.

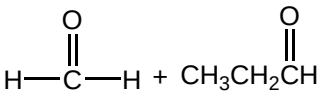
a) 

b)

c) 

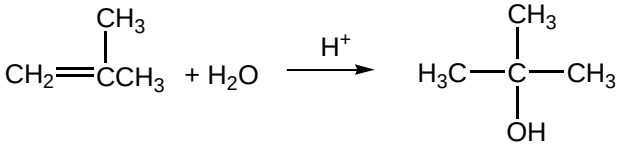
d) 

e) 

f) 

11. Reagisce più velocemente il substrato che, per addizione di H+, dà origine al carbocatione intermedio più stabile. Così il 2-metilpropene è quello che reagisce più velocemente perché dà origine ad un carbocatione terziario; il propene dà origine ad un carbocatione secondario (meno stabile del terziario) e l'etene dà origine ad un carbocatione primario (meno stabile di tutti).

12.



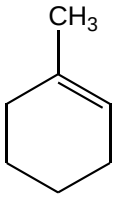
Il carbocatione più stabile è quello terziario.

13. $CH_3CH_2CH_2CH_2C{\equiv}CCH_2CH_2CH_2CH_3$

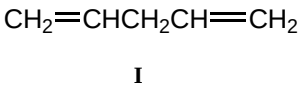
$$CH_3CH_2CH_2CH_2C{\equiv}CCH_2CH_2CH_2CH_3 \xrightarrow{H_2 / Ni} CH_3CH_2CH_2CH_2CH{=}CHCH_2CH_2CH_2CH_3$$

$$CH_3CH_2CH_2CH_2CH{=}CHCH_2CH_2CH_2CH_3 \xrightarrow[2.\ Zn,\ HCl]{1.\ O_3} 2\ CH_3CH_2CH_2CH_2CHO$$

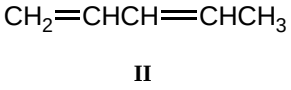
14.



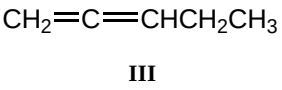
15.



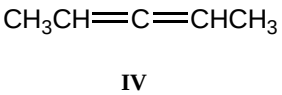
I



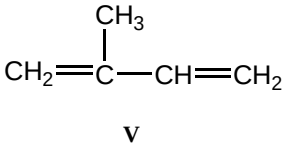
II



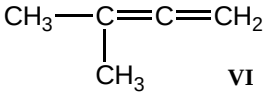
III



IV



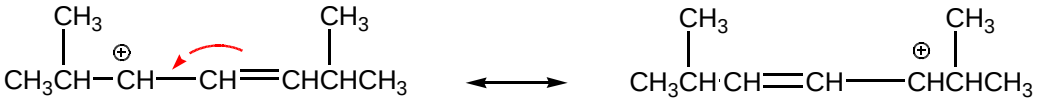
V



VI

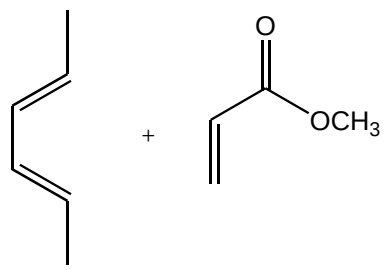
II e **V** sono dieni coniugati.

16.

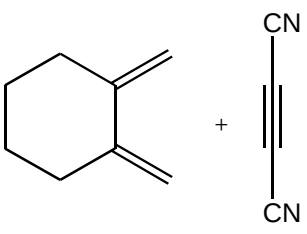


Il carbocatione ha una struttura simetrica

17. a)



b)



18.