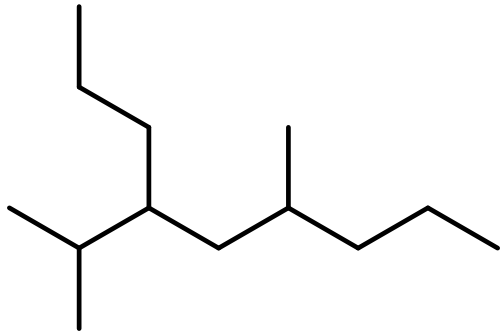
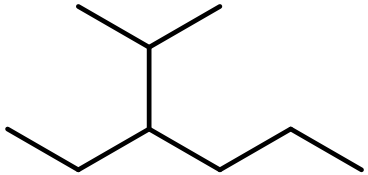
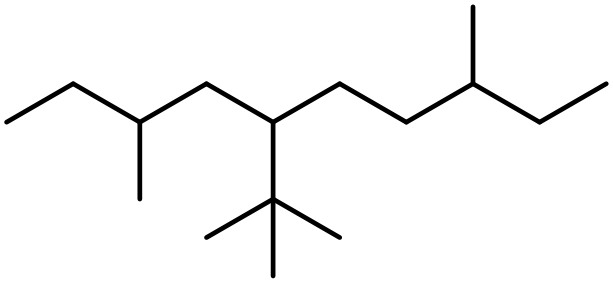
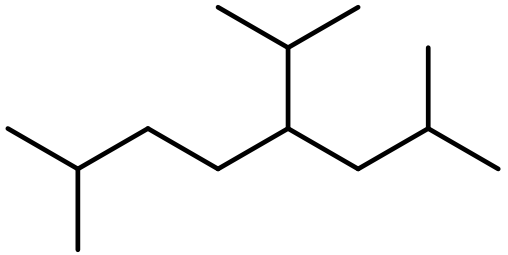
1. Nomenclatura alcani lineari

1. 

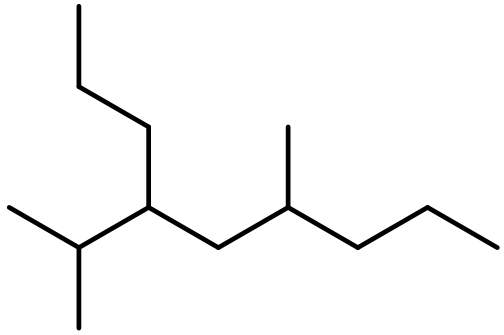
2. 

3. 

4. 

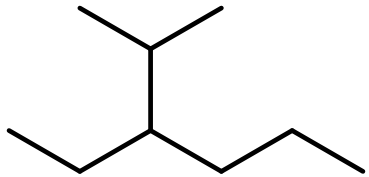
1. Nomenclatura alcani lineari (soluzioni)

1.



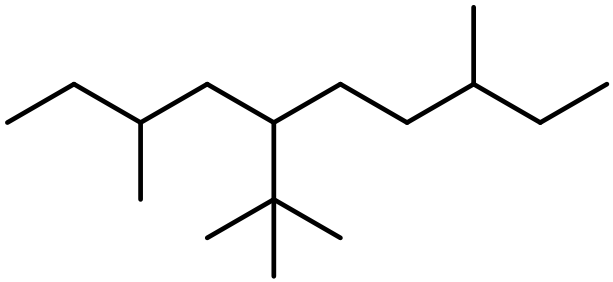
4-isopropil-6-metilnonano

2.



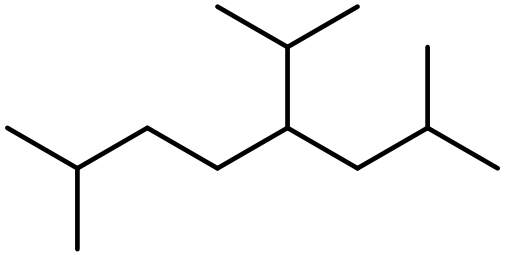
3-etil-2-metilesano

3.



5-(*terz*-butil)-3,8-dimetildecano

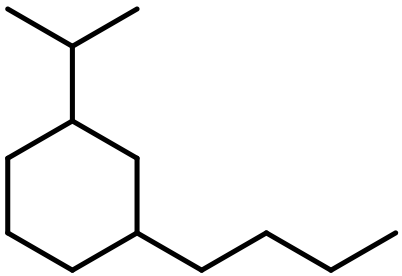
4.



4-isopropil-2,7-dimetilottano

2. Nomenclatura alcani ciclici

1.



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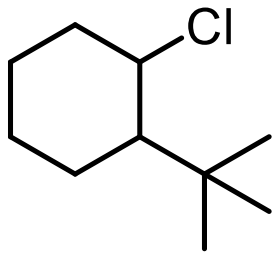

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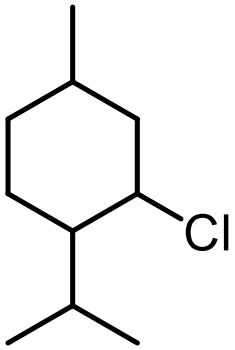

2. Nomenclatura alcani ciclici (soluzioni)

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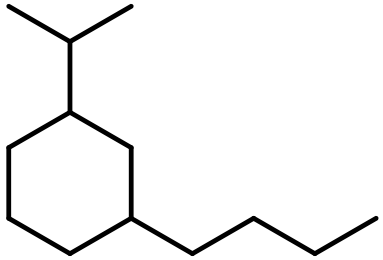
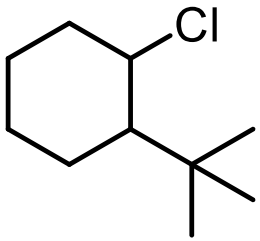


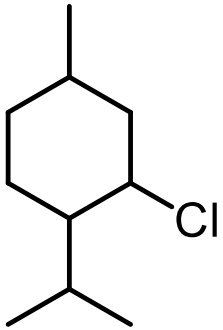
1-butli-3-isopropilcicloesano

2.



1-(*terz*-butil)-2-clorocicloesano

3.

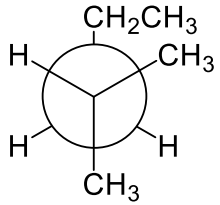


2-cloro-1-isopropil-4-metilcicloesano

3. Disegnare in proiezione di Newman l'1-clorobutano.

4. Quale delle seguenti proiezioni di Newman non è quella del 2-metilbutano?

a.



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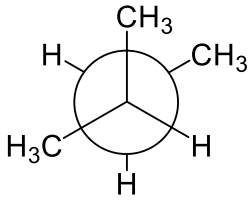

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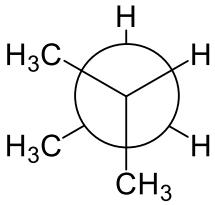

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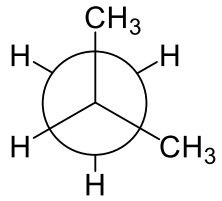
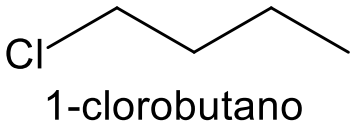
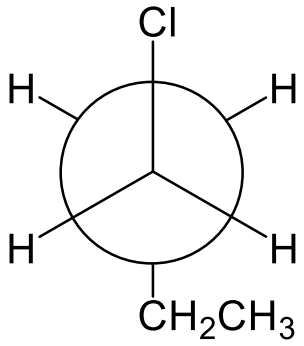


3. Disegnare in proiezione di Newman l'1-clorobutano (soluzioni).

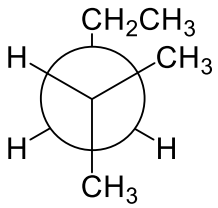


1-clorobutano



4. Quale delle seguenti proiezioni di Newman non è quella del 2-metilbutano? (soluzioni)

a.



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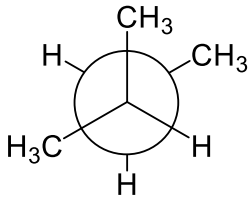

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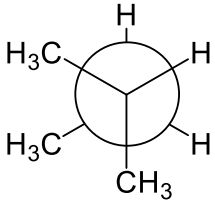

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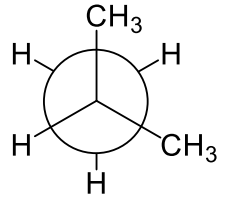
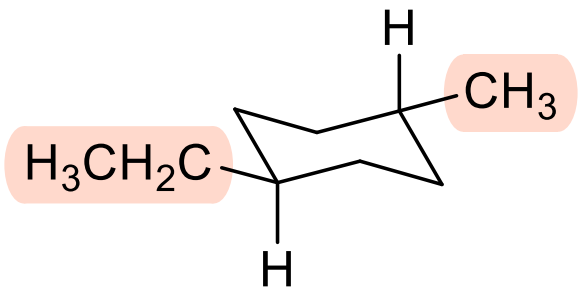


5. Qual è il conformero più stabile tra questi due?

a.



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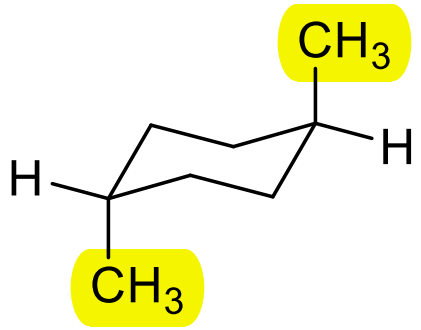
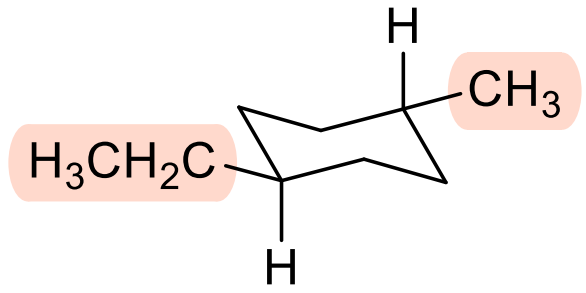


6. Disegnare il *trans*-1-cloro-3-metilcicloesano nelle sue conformazioni a sedia.

5. Qual è il conformero più stabile tra questi due? (soluzioni)

a.



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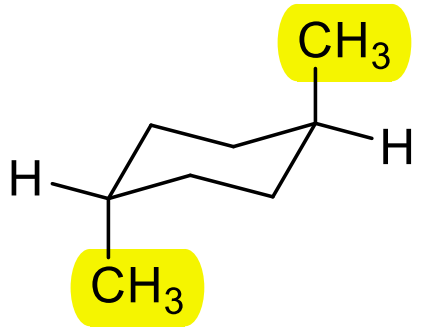
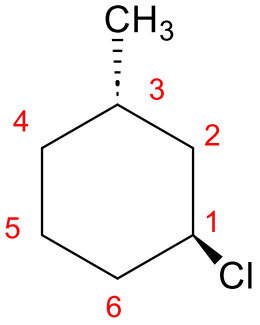
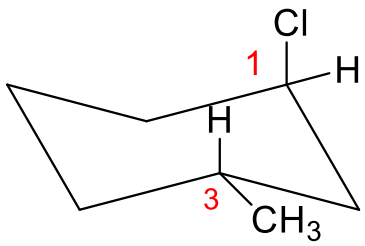


6. Disegnare il *trans*-1-cloro-3-metilcicloesano nella sue conformazioni a sedia (soluzioni).



a.



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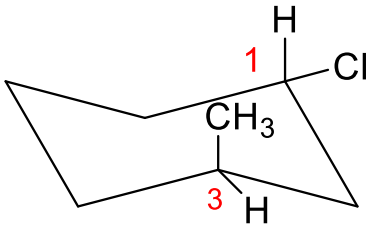
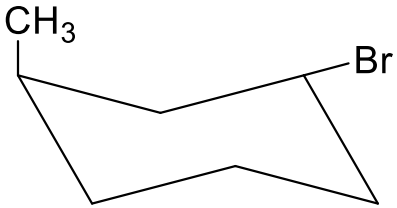


7. Quale dei seguenti cicloalcani è *cis*-1,3-disostituito?

a.



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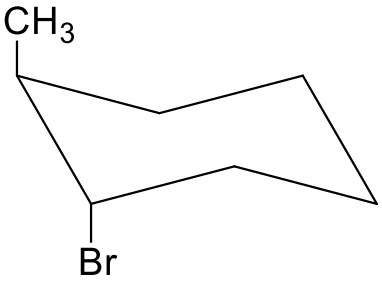
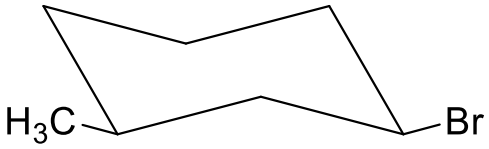


c.



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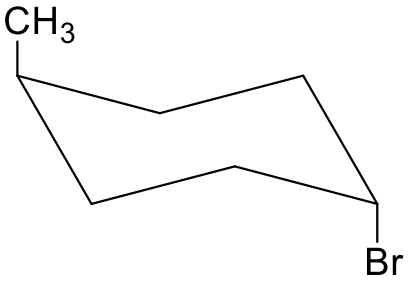
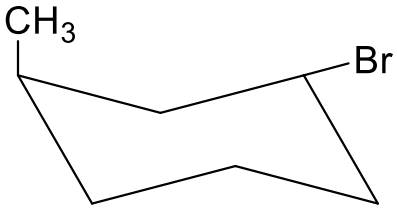


7. Quale dei seguenti cicloalcani è *cis*-1,3-disostituito? (soluzioni)

a.



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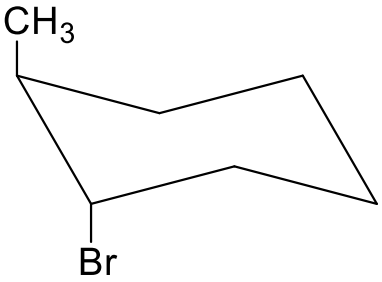

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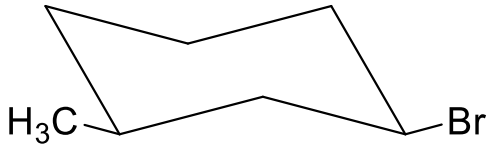

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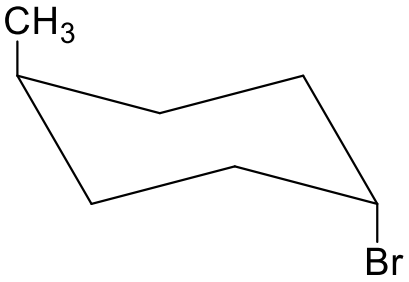


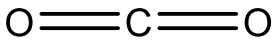
Numero di Ossidazione

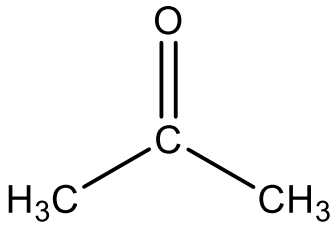
Numero (positivo, negativo, nullo, frazionato o intero) che rappresenta la carica assegnata arbitrariamente ad un atomo. Nei composti organici l'atomo di carbonio può assumere tutti i numeri di ossidazione compresi tra -4 e +4.

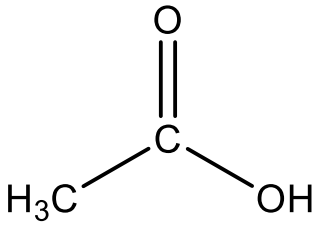
Regole per assegnare il numero di ossidazione all'atomo di carbonio:

1. Legame con un altro atomo di carbonio → carica nulla (0)
2. Legame con un atomo di **idrogeno** o altri atomi **meno elettronegativi** → carica **-1**
3. Legame con un atomo di **ossigeno**, **alogeni** o atomi **più elettronegativi** → carica **+1**
4. Legami multipli: il numero di ossidazione dell'atomo di carbonio si moltiplica per il numero di legami

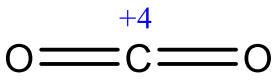
8. Assegnare il numero di ossidazione all'atomo di carbonio

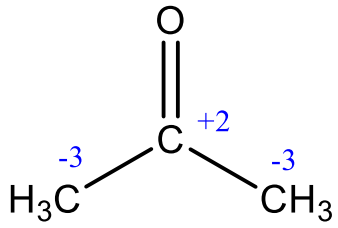
1. 

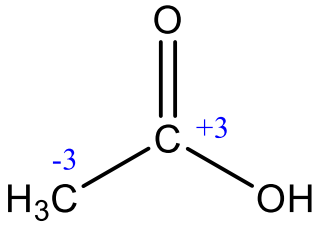
2. 

3. 

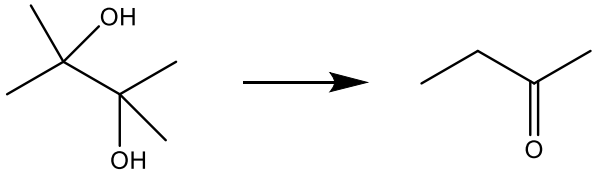
8. Assegnare il numero di ossidazione all'atomo di carbonio (soluzioni)

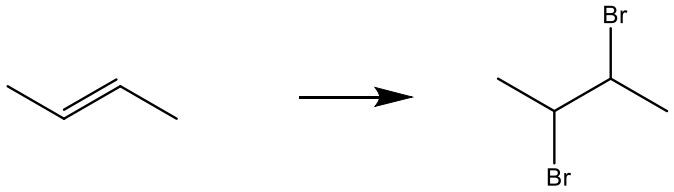
1. 

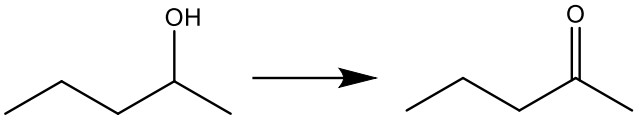
2. 

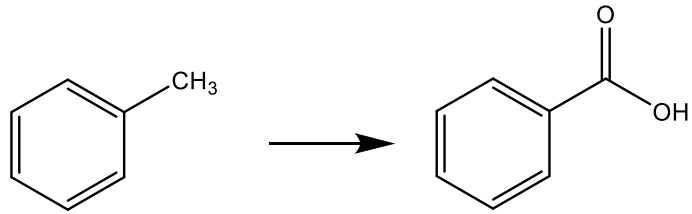
3. 

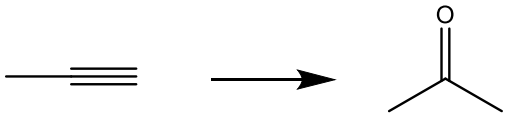
9. Indicare gli atomi di carbonio che variano il numero di ossidazione e come varia

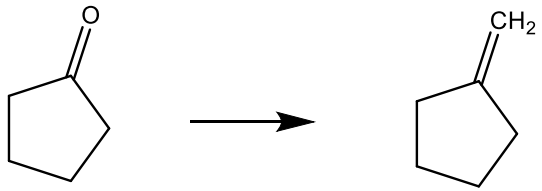
1. 

2. 

3. 

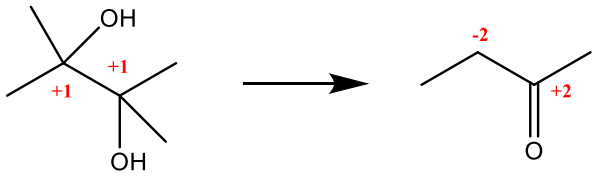
4. 

5. 

6. 

9. Indicare gli atomi di carbonio che variano il numero di ossidazione e come varia (soluzioni)

1.



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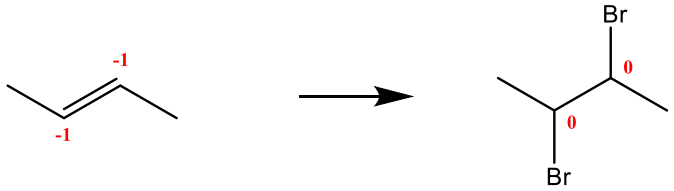

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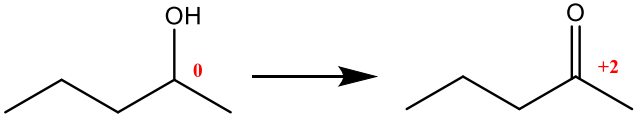

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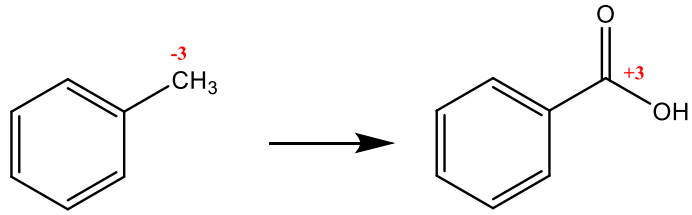
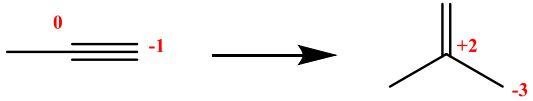


5.



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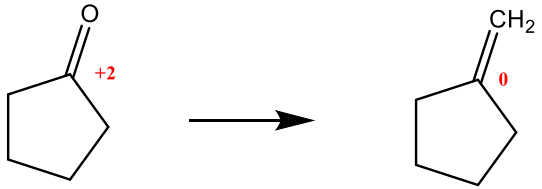


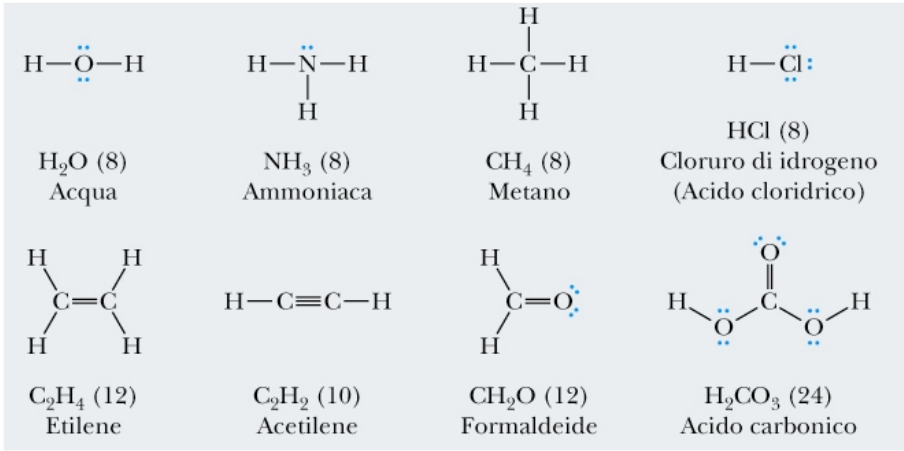
Strutture di Lewis

- le molecole, o ioni, si assemblano a partire dagli atomi che li costituiscono utilizzando solo gli **elettroni di valenza** (ovvero gli elettroni del guscio esterno)

- ogni **coppia di elettroni** condivisa fra due atomi verrà rappresentata da una **linea** tra gli atomi mentre ogni **coppia di elettroni non condivisa** verrà rappresentata con una **coppia di punti**

- Il numero degli **elettroni di valenza** si ricava dal **numero del GRUPPO** a cui l'elemento appartiene (ad eccezione dell'elio)

1A							8A
1 **H** $1s^1$	2A	3A	4A	5A	6A	7A	2 **He** $1s^2$
3 **Li** $2s^1$	4 **Be** $2s^2$	5 **B** $2s^2 2p^1$	6 **C** $2s^2 2p^2$	7 **N** $2s^2 2p^3$	8 **O** $2s^2 2p^4$	9 **F** $2s^2 2p^5$	10 **Ne** $2s^2 2p^6$
11 **Na** $3s^1$	12 **Mg** $3s^2$	13 **Al** $3s^2 3p^1$	14 **Si** $3s^2 3p^2$	15 **P** $3s^2 3p^3$	16 **S** $3s^2 3p^4$	17 **Cl** $3s^2 3p^5$	18 **Ar** $3s^2 3p^6$

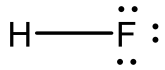


10. Scrivere la struttura di Lewis per ciascuno dei seguenti composti

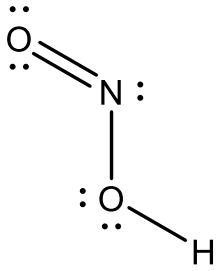
a) HF
b) HNO_2
c) HNO_3
d) H_3PO_4
e) F_2
f) H_2SO_3
g) H_2CO_3
h) NH_3

10. Scrivere la struttura di Lewis per ciascuno dei seguenti composti (soluzioni)

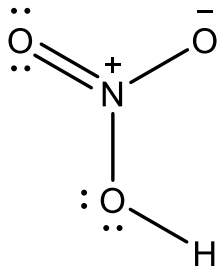
a.



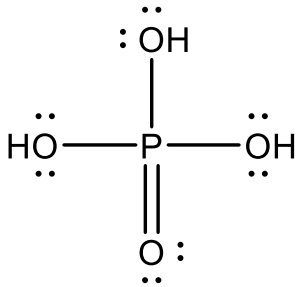
b.



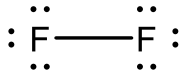
c.



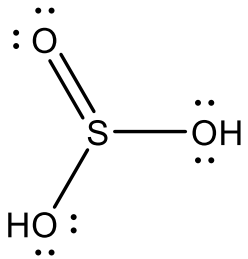
d.



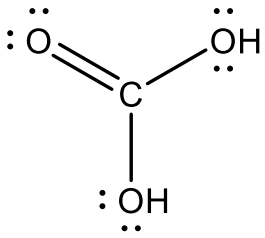
e.



f.



g.



h.