

Quali dei seguenti composto non esiste ?

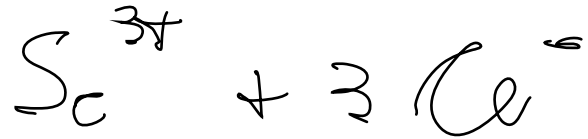
MgCl , ScCl_3 , BaF_3 , CsKr , Na_2O :



(NO)



(SI)



(NO)

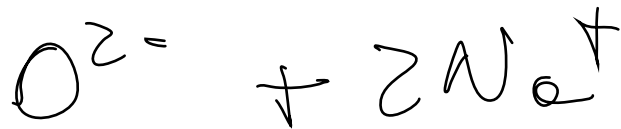


(NO)

GAS MOBILE + METALLO ALCALINO



(SI)



Calcolare l'entalpia molare di formazione di LiF solido sapendo che (ed altri valori tabulati):

$$\Delta H_f^\circ[\text{Li(g)}] = 159.37 \text{ kJ/mol,}$$

Compound	$\Delta E_{\text{lattice}}$ (kJ/mol)
LiF	-1037
LiCl	-852
LiBr	-815
LiI	-761
NaF	-926
NaCl	-786
NaBr	-752
NaI	-702
KF	-821
KCl	-717
KBr	-689
KI	-649

Perche' l'energia reticolare diminuisce in valore assoluto passando da LiF ad LiCl etc... ?

Energia di ionizzazione

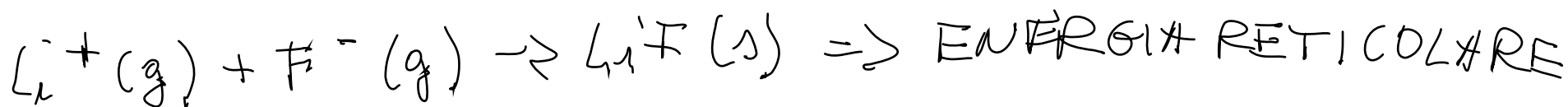
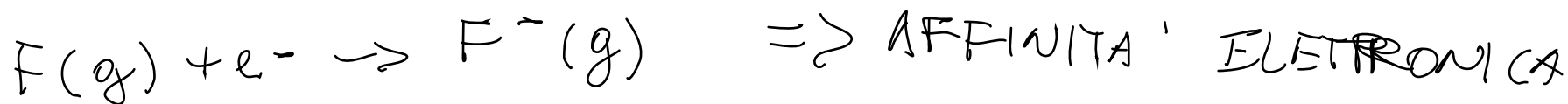
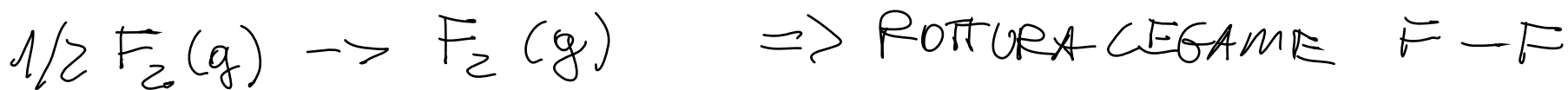
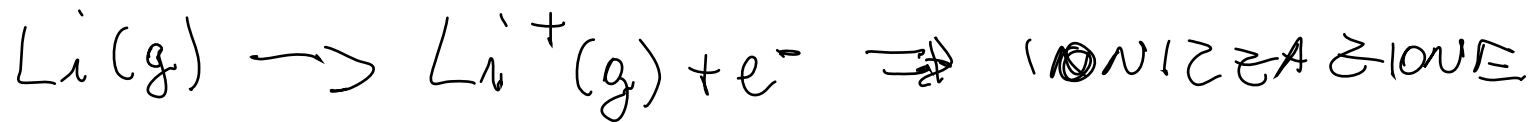
1A (1)	2A (2)											3A (13)	4A (14)	5A (15)	6A (16)	7A (17)	8 (18)
H 1312												B 801	C 1086	N 1402	O 1314	F 1681	He 2371
Li 520	Be 899											Al 578	Si 786	P 1012	S 1000	Cl 1251	Ar 1521
Na 496	Mg 738	3B (3)	4B (4)	5B (5)	6B (6)	7B (7)	8B (8,9,10)			1B (11)	2B (12)	Ga 579	Ge 762	As 947	Se 941	Br 1140	Kr 1351
K 419	Ca 599	Sc 631	Ti 658	V 650	Cr 652	Mn 717	Fe 759	Co 758	Ni 757	Cu 745	Zn 906	In 579	Ge 762	As 947	Se 941	Br 1140	Kr 1351
Rb 403	Sr 550	Y 617	Zr 661	Nb 664	Mo 685	Tc 702	Ru 711	Rh 720	Pd 804	Ag 731	Cd 868	In 558	Sn 709	Sb 834	Te 869	I 1008	Xe 1170
Cs 377	Ba 503	La 538	Hf 681	Ta 761	W 770	Re 760	Os 840	Ir 880	Pt 870	Au 890	Hg 1007	Tl 589	Pb 715	Bi 703	Po 812	At 890	Rn 1037

Table 14 Electron Affinity Values for Some Elements (kJ/mol)*

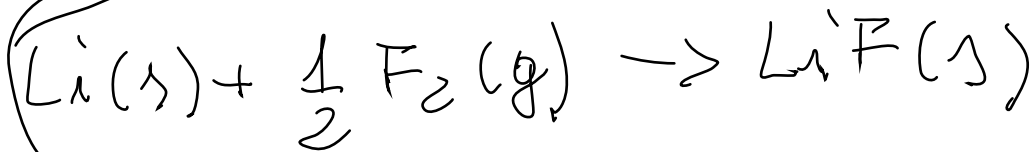
H							
-72.77							
Li	Be	B	C	N	O	F	
-59.63	0†	-26.7	-121.85	0	-140.98	-328.0	
Na	Mg	Al	Si	P	S	Cl	
-52.87	0	-42.6	-133.6	-72.07	-200.41	-349.0	
K	Ca	Ga	Ge	As	Se	Br	
-48.39	0	-30	-120	-78	-194.97	-324.7	
Rb	Sr	In	Sn	Sb	Te	I	
-46.89	0	-30	-120	-103	-190.16	-295.16	
Cs	Ba	Tl	Pb	Bi	Po	At	
-45.51	0	-20	-35.1	-91.3	-180	-270	

Table 20 (continued)

Species	ΔH_f° (298.15 K) (kJ/mol)	S° (298.15 K) (J/K · mol)	ΔG_f° (298.15 K) (kJ/mol)
<i>Fluorine</i>			
F ₂ (g)	0	202.8	0
F(g)	78.99	158.754	61.91
F ⁻ (g)	-255.39	—	—
F ⁻ (aq)	-332.63		-278.79
HF(g)	-273.3	173.779	-273.2
HF(aq)	-332.63	88.7	-278.79
<i>Lithium</i>			
Li(s)	0	29.12	0
Li (g)	159.37	—	—
LiOH(s)	-484.93	42.81	-438.96
LiOH(aq)	-508.48	2.80	-450.58
LiCl(s)	-408.701	59.33	-384.37

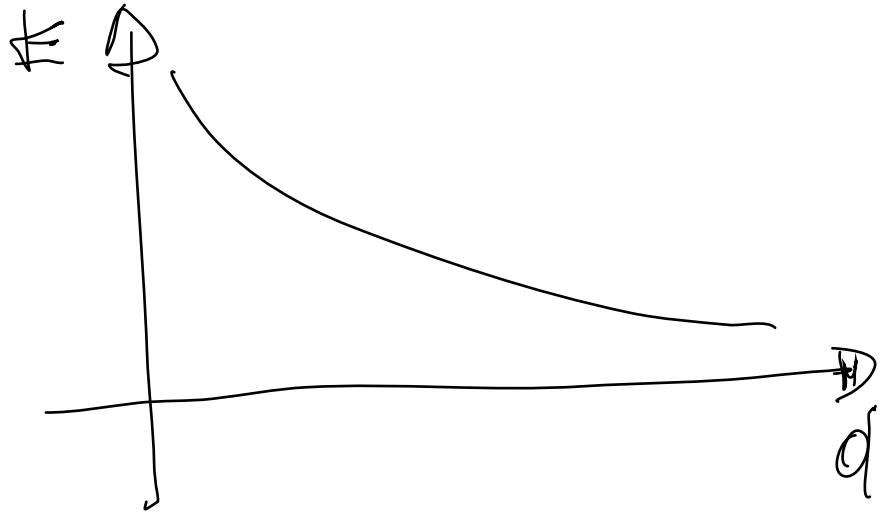


$$\begin{aligned} \Delta H_f^\circ (\text{LiF}(s)) &= 159.37 + 520 + 78.99 - 328.0 - 1037 \\ &= -606.71 \text{ kJ/mol} \end{aligned}$$



Se la distanza tra anione e catione in un solido cristallino diminuisce ma le cariche rimangono costanti, il punto di fusione diminuisce o aumenta ?

$E \propto \frac{q_1 q_2}{d}$ se q_1 e q_2 sono costanti.



SE d diminuisce
allora E aumenta.
quindi T AUMENTA

Disegnare le strutture di lewis delle seguenti molecole:



Trifluoruro di azoto



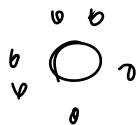
Ione clorato



Acido ipobromoso

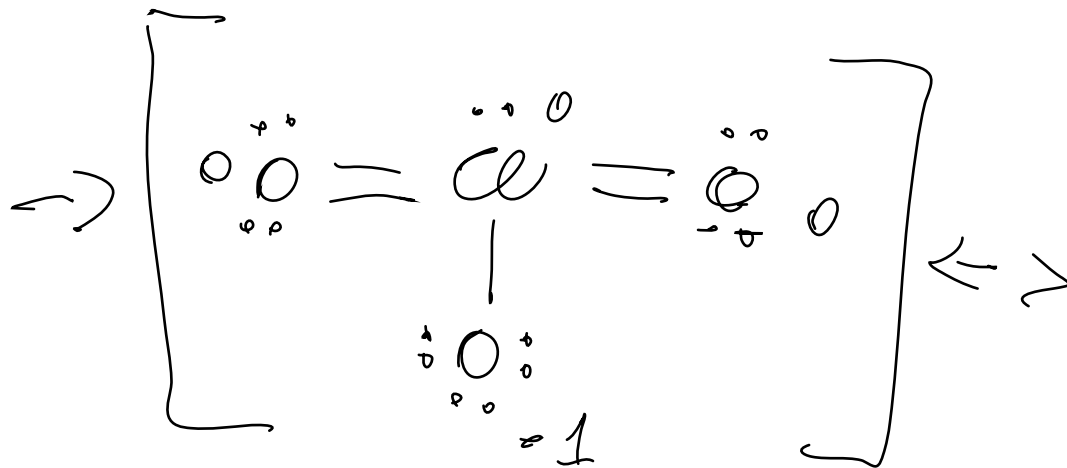
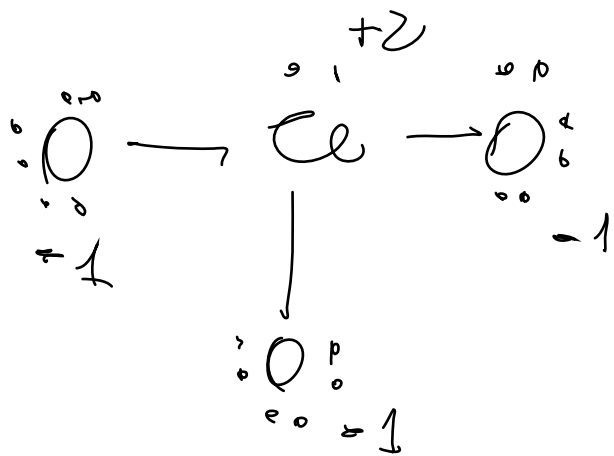


Ione solfito

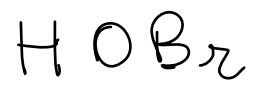


$$7 + 6 \cdot 3 + 1 = 26$$

13

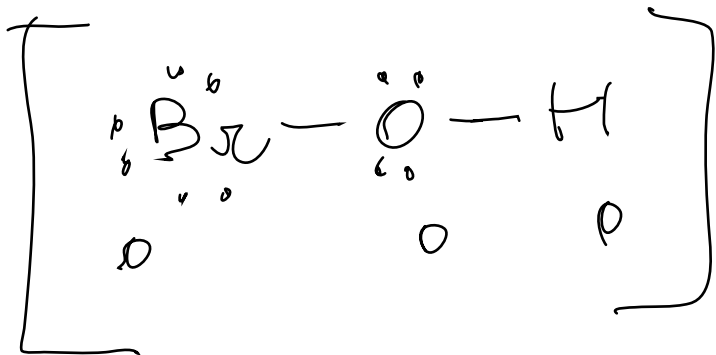


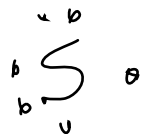
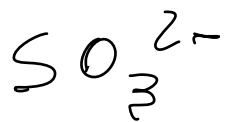
RESONANZA



$$7 + 6 + 1 = 14$$

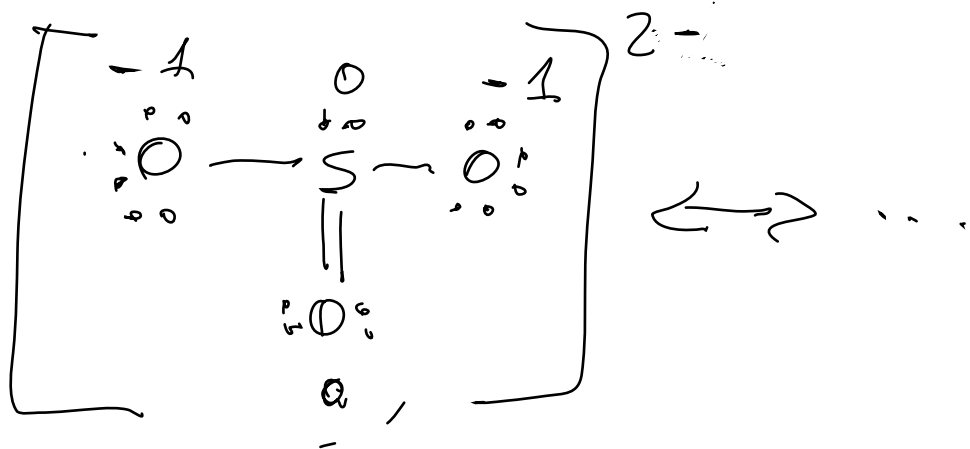
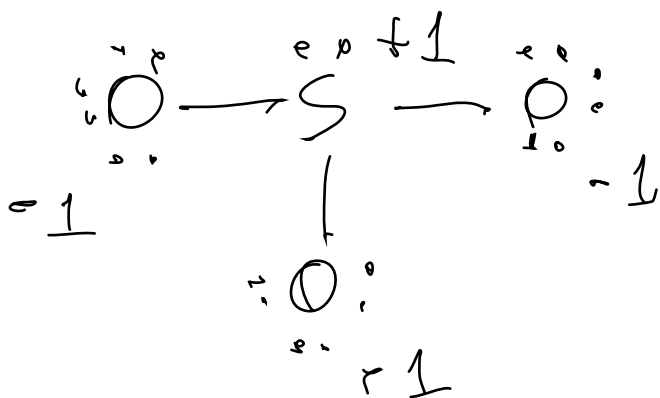
(7)





$$6 \cdot 4 + 2 = 26$$

13

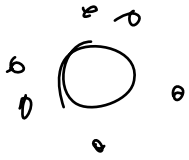


Disegnare le strutture di lewis delle seguenti molecole:

(a) SO_2 Diossido di zolfo

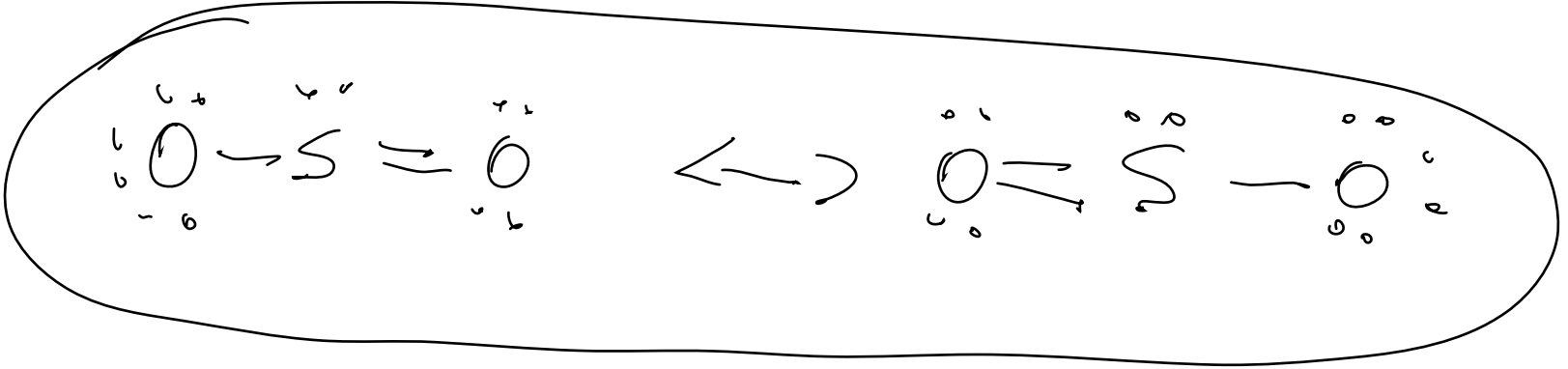
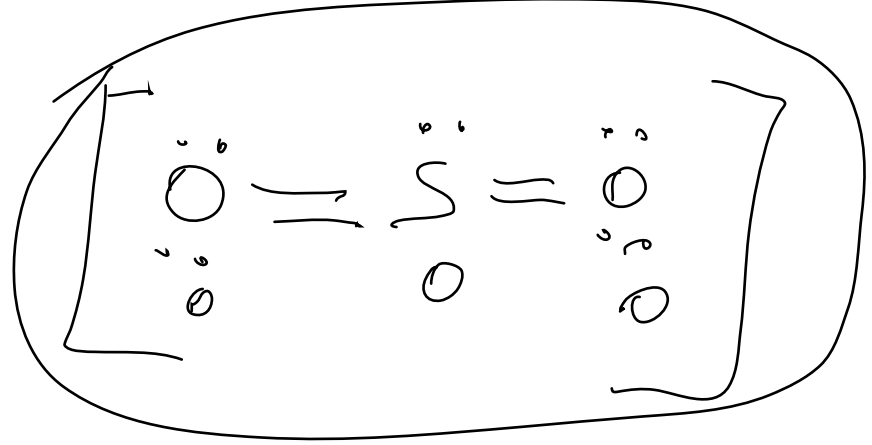
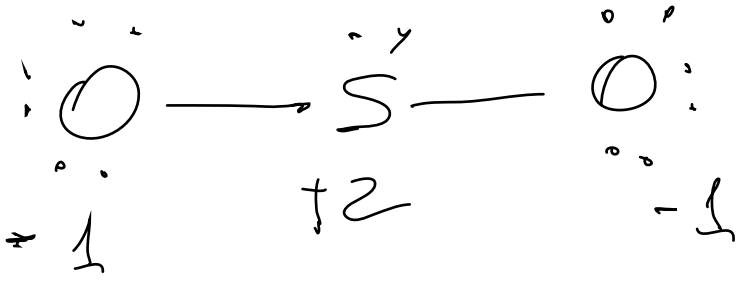
(b) NO_2^- Nitrito

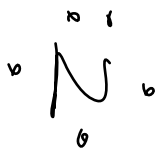
(c) SCN^- Tiocianato



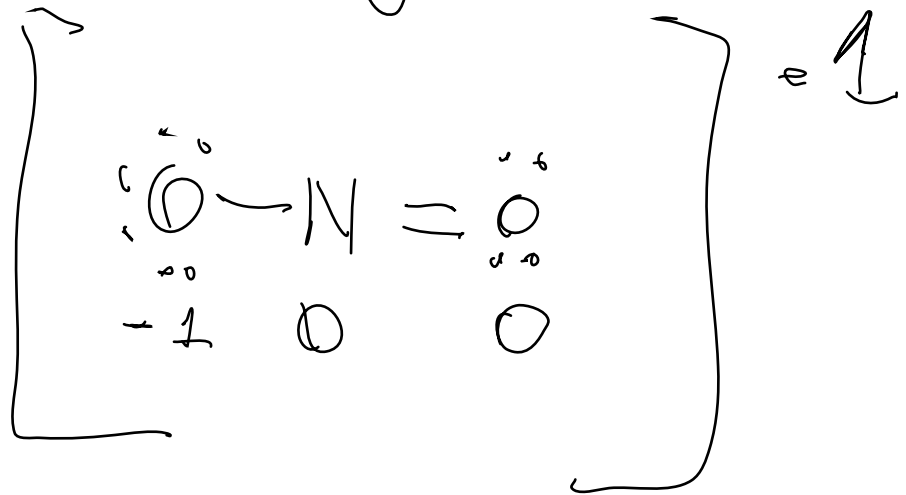
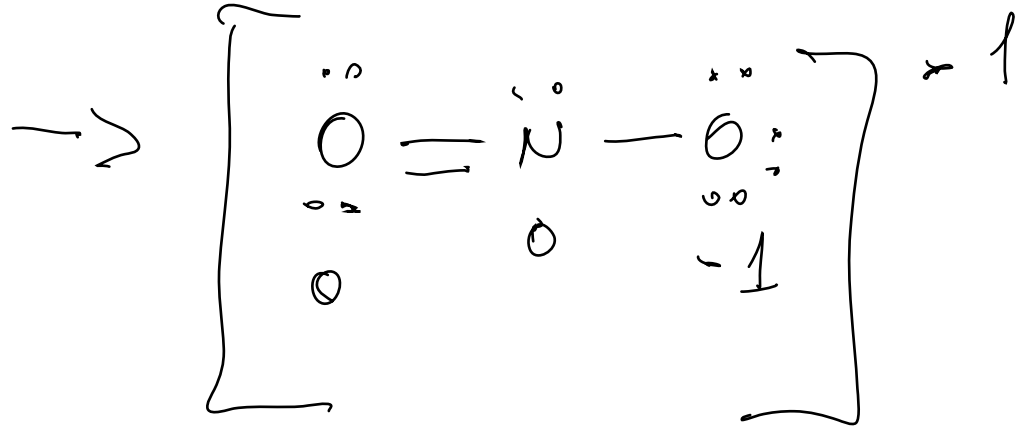
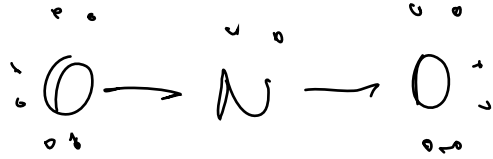
$$6 \cdot 3 = 18$$

9 COPIES



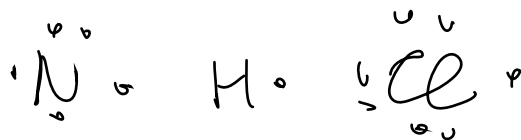
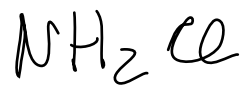


$$6 \cdot 2 + 5 + 1 = 18 \quad 9 \text{ COPIES}$$



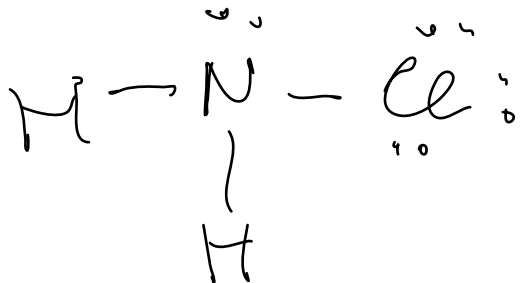
Disegnare le strutture di lewis delle seguenti molecole, e descrivere geometria delle coppie e delle molecole:

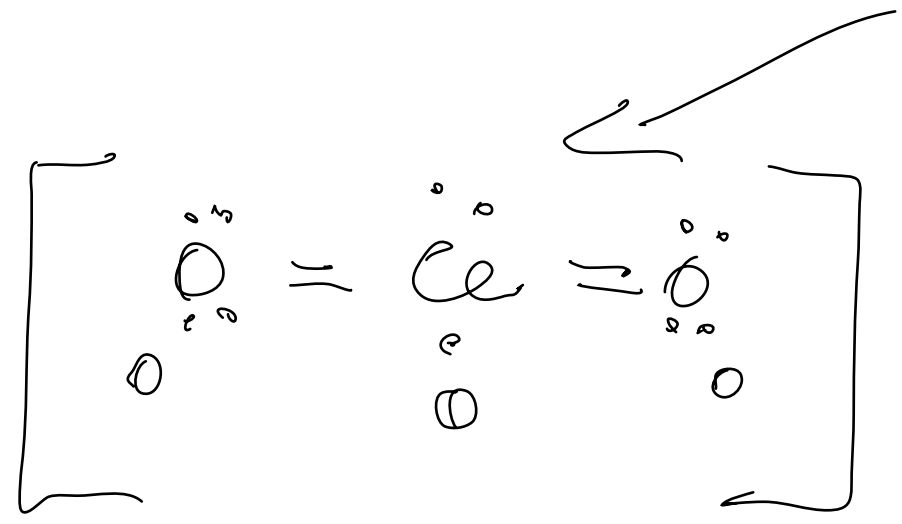
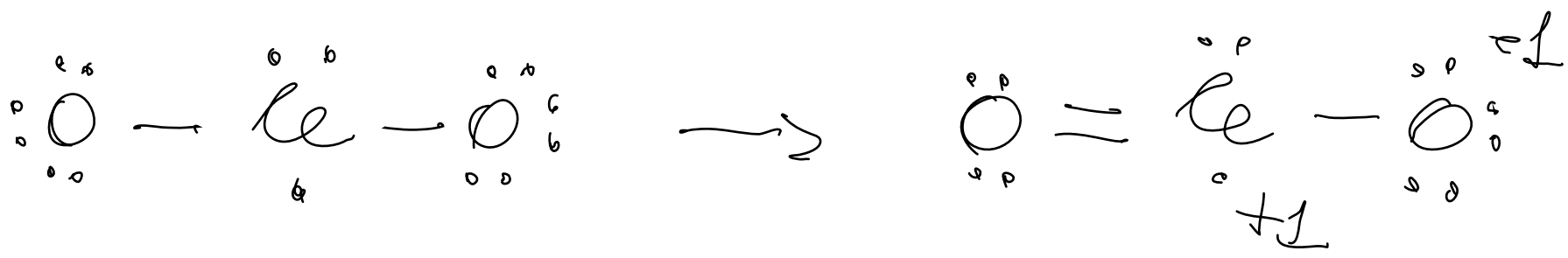
- (a) NH_2Cl Cloroammina
- (b) Cl_2O | Monossido di dicloro
- (c) SCN^- Tiocinato
- (d) HOF Acido ipofluoroso
- (a) ClF_2^- -
- (b) SnCl_3^- -
- (c) PO_4^{3-} Fosfato
- (d) CS_2 Solfuro di carbonio o disolfuro di carbonio



$$5 + 2 + 7 = 14$$

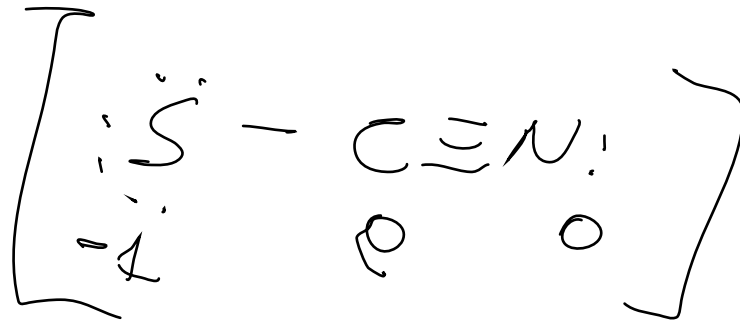
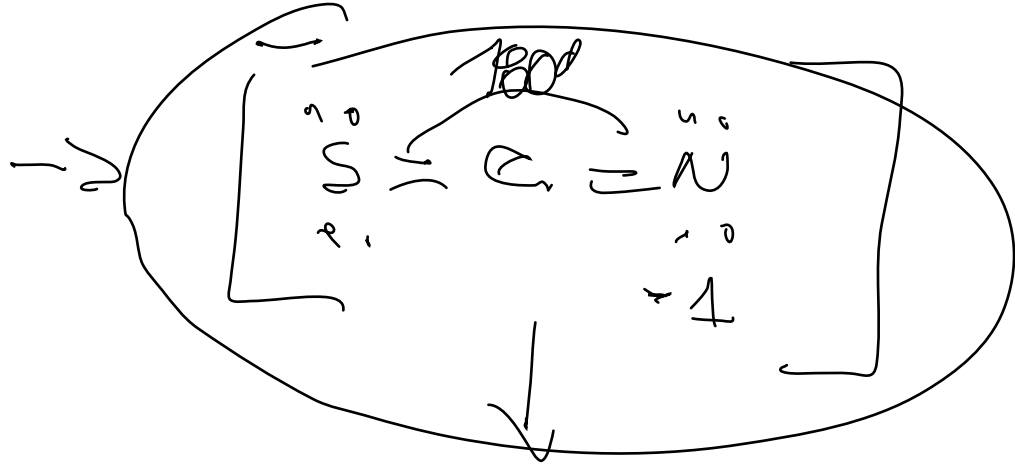
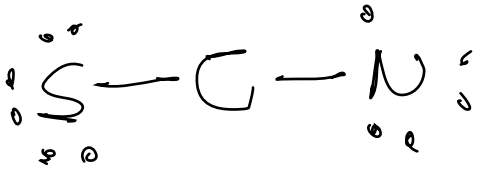
⑦



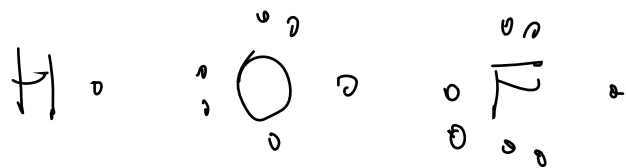




$$5 + 4 + 1 + 6 = 16 \quad (18)$$

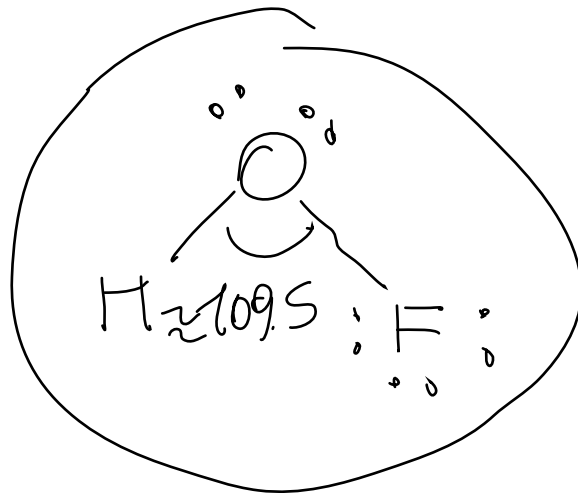
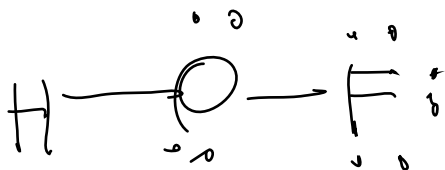


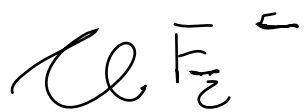
HOF



$$7 + 6 + 1 = 14$$

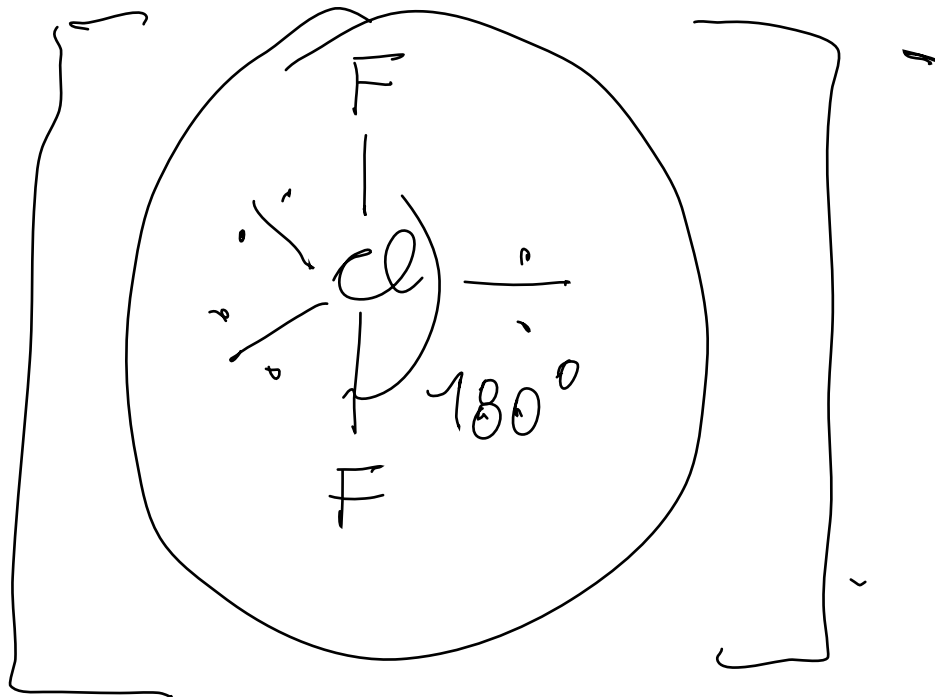
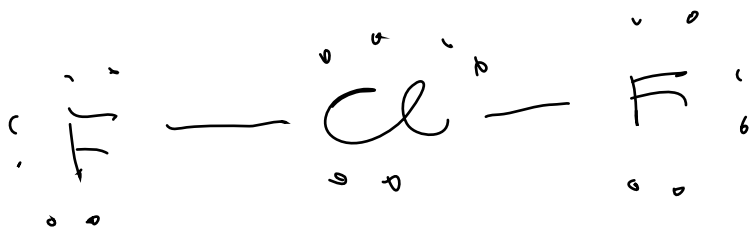
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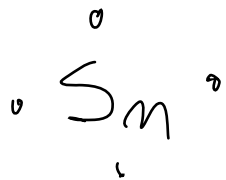
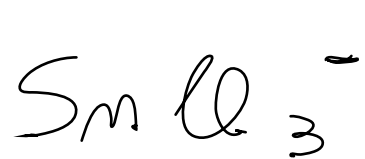




$$7 \cdot 2 + 1 = 22$$

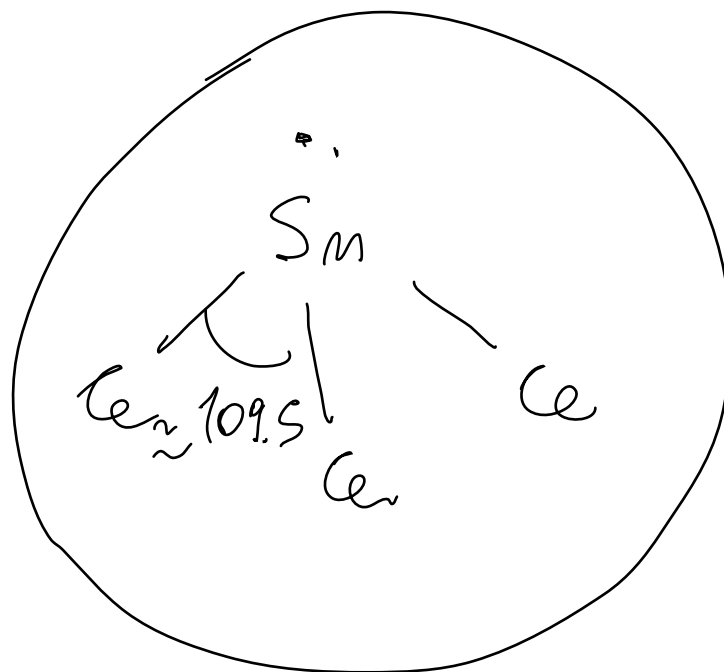
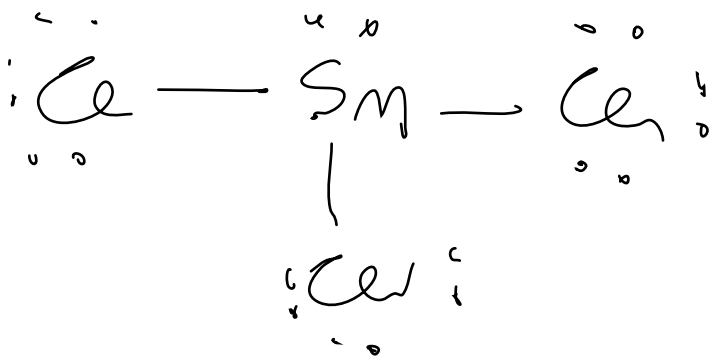
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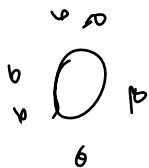
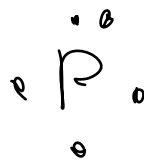
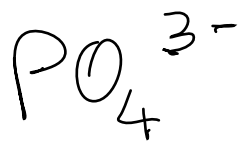




$$7 \times 3 + 4 + 1 = 26$$

13





$$6 \cdot 4 + 5 + 3 = 32$$

16

