

Name: Key Date: \_\_\_\_\_

**Covalent Bond Practice**

1. Fill in the missing information on the chart.

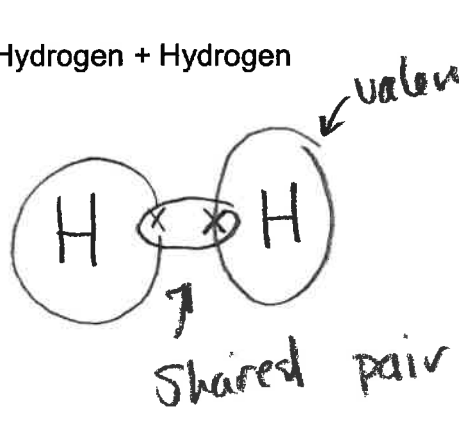
Element	# of Protons	# of Electrons	# of Valence Electrons
Carbon	6	6	4
Hydrogen	1	1	1
Chlorine	17	17	7
Helium	2	2	2
Phosphorus	15	15	5
Oxygen	8	8	6
Sulfur	16	16	6
Nitrogen	7	7	5

2. For each of the following covalent bonds:

- Write the symbols for each element.
- Draw a Bohr Diagram for the valence shell of each element.
- Rearrange the electrons to pair up electrons from each atom.

*only (inside shells not shown)*

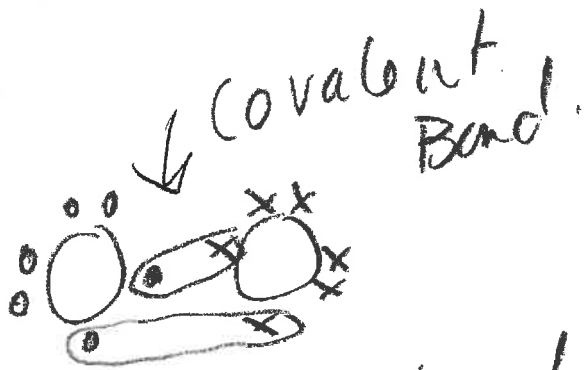
a) Hydrogen + Hydrogen



$H_2(g)$  diatomic molecule  
hydrogen gas.

extra

$O_2$

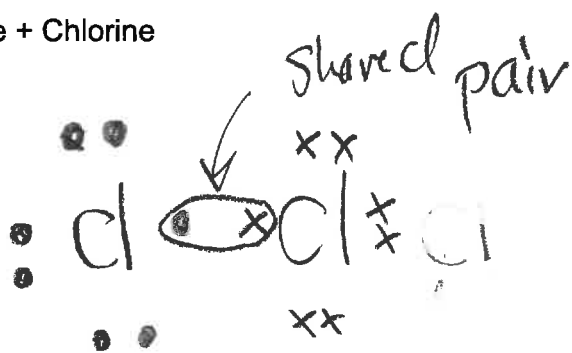


two shared pairs  
ie double bond.

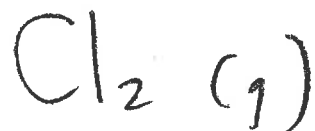
Name: \_\_\_\_\_

Date: \_\_\_\_\_

b) Chlorine + Chlorine

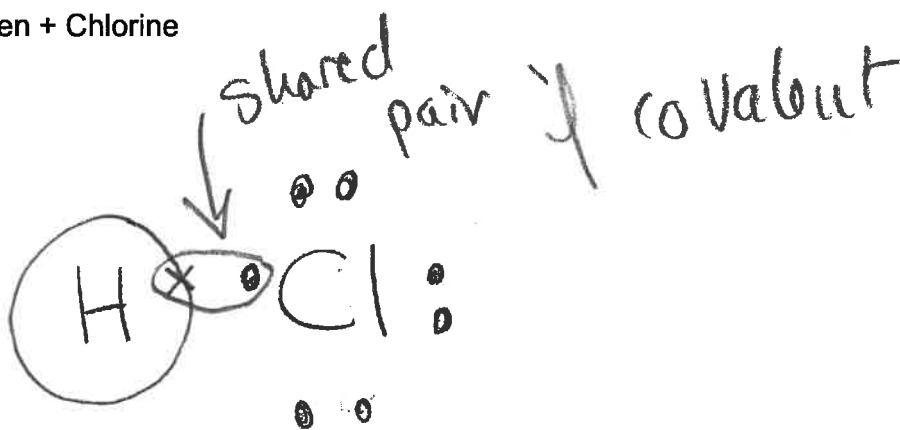


diatomic  
molecule

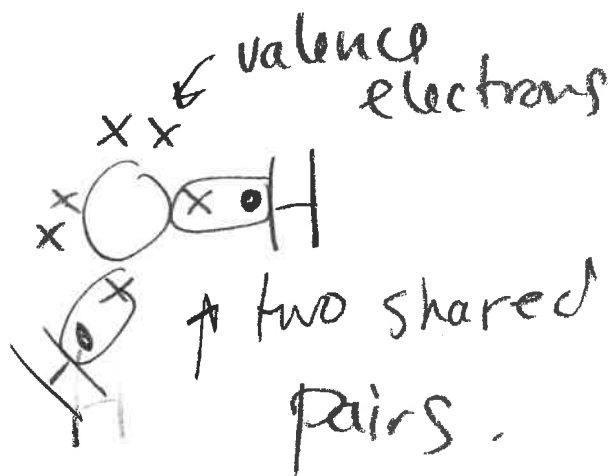
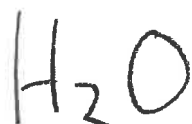


Chlorine gas.

c) Hydrogen + Chlorine



extra example



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### Ionic Bonds Practice

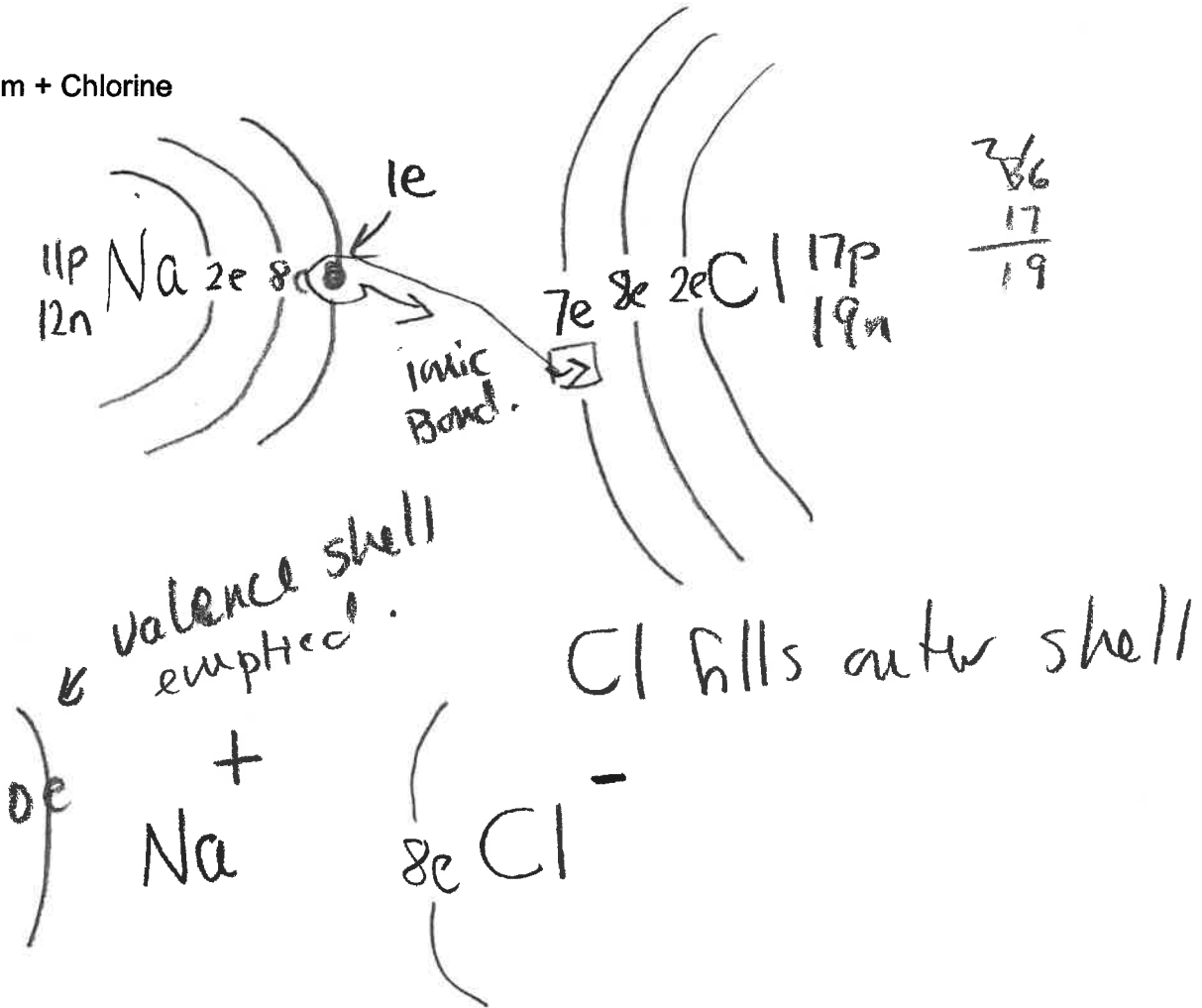
1. Fill in the missing information on the chart.

Element	# of Protons	# of Electrons	# of Valence Electrons
Sodium	11	11	1
Chlorine	17	17	7
Beryllium	4	4	2
Fluorine	9	9	7
Lithium	3	3	1
Oxygen	8	8	6
Phosphorus	15	15	5

2. For each of the following ionic bonds:

- Write the symbols for each element.
- Draw a Bohr Diagram for the valence shell of each element.
- Draw an arrow (or more if needed) to show the transfer of electrons to the new element.

a) Sodium + Chlorine

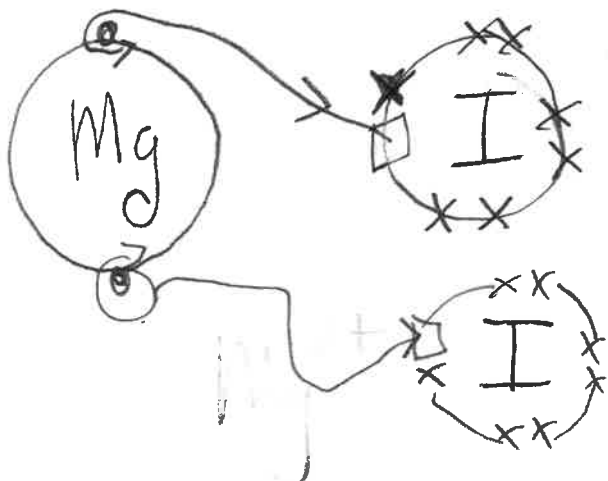


Name: \_\_\_\_\_

Date: \_\_\_\_\_

b) Magnesium + Iodine

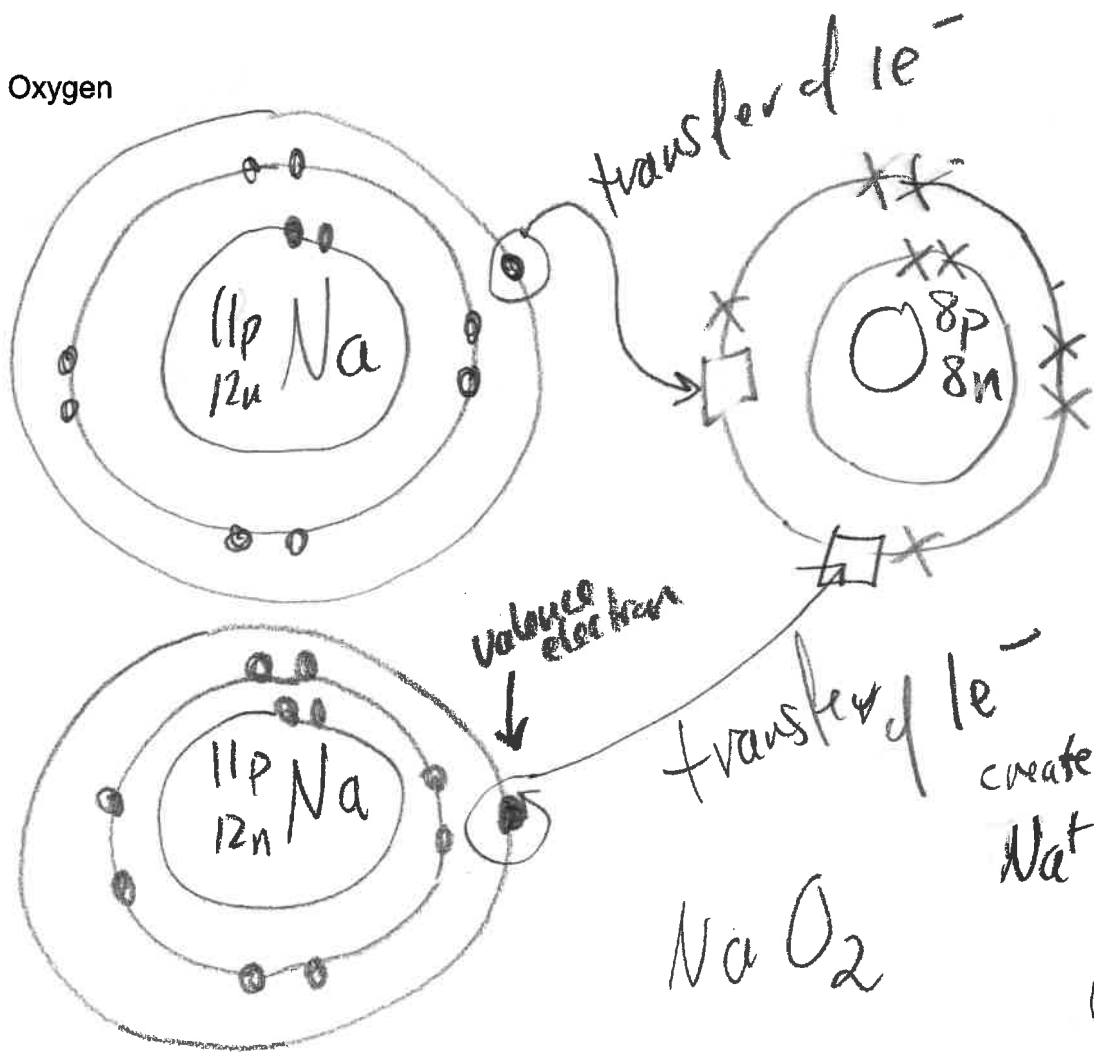
Drawing  
valence shells only



$2e^-$   
from Mg  
→ 2 different  
I creating  
ions.



c) Sodium + Oxygen



$NaO_2$   
 $O^{2-}$