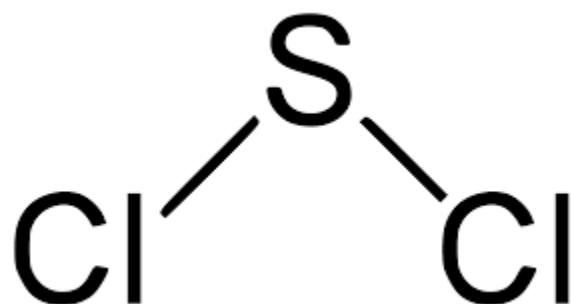
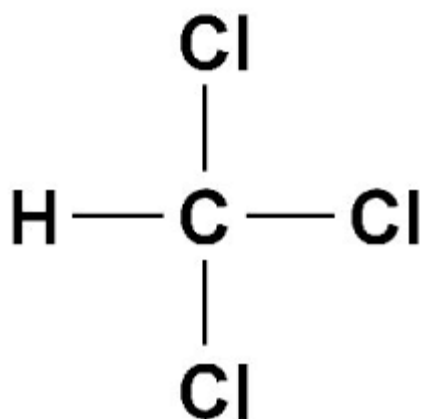
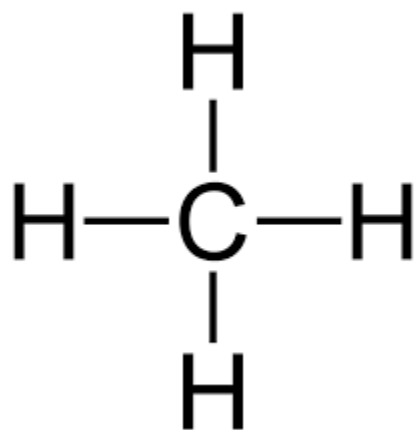
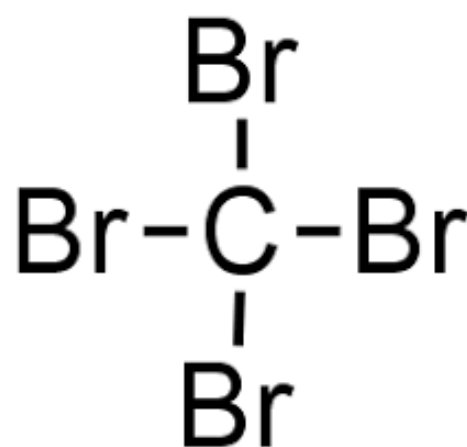
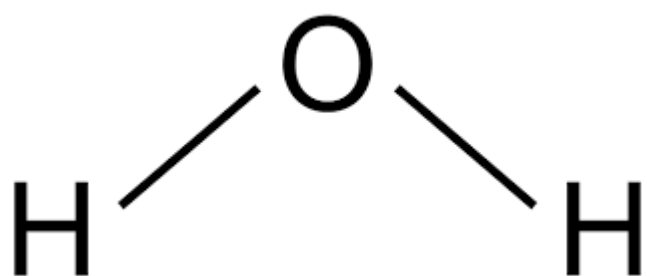


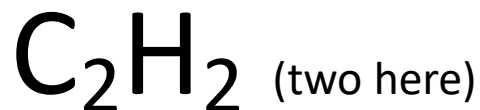
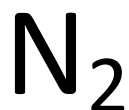
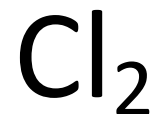
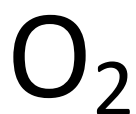
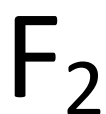
1 Which are polar MOLECULES?

Which exhibit dipole attraction,

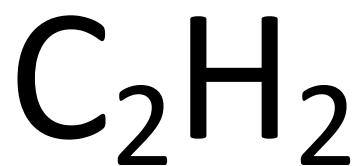
which exhibit hydrogen bonding?



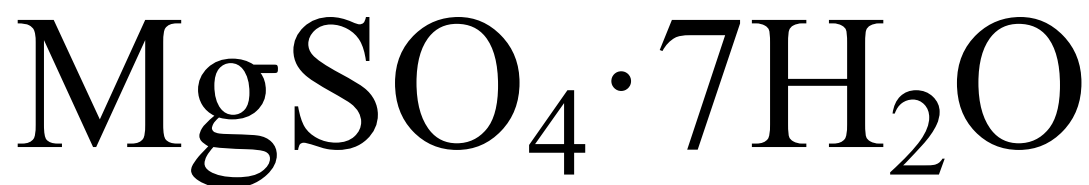
2. How many pairs of electrons
in each of the bonds here?



3 Name all of the bonds in these
two compounds...



4 Name all of the bonds in these
two compounds...

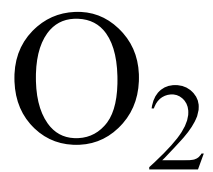


5 The molecules formed in group 17 are all diatomic, all have single nonpolar covalent bonds, and are all nonpolar molecules; yet two are gases, one is liquid and one is a solid at STP.

Which are gases, which is a liquid, which is a solid, and, what sort of bonding is going on here that explains this?

6

Draw Lewis Dot Diagrams for



7. Are these molecules polar or nonpolar?



8

Name the bonds in these molecules.



9

Name the bonds in these molecules.



10

Rank the bonds by most polar to
least polar...



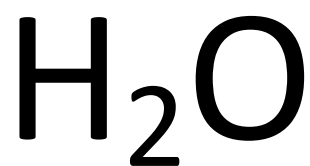
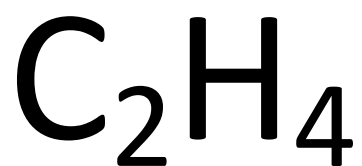
11

Which of these makes only ionic bonds?



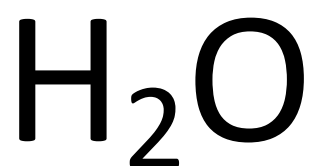
12

Which have radial symmetry?



BONUS

What are the relative oxidation numbers for all atoms/ions here?



BONUS #2

Name the special bonds that are found in these compounds....

Phosphorous Pentachloride

Ozone

Boron Trifluoride

Carbon Monoxide

Janet and Charlie

If the bonds are “normal”,
tell why the compounds
might be special

(do they break any particular rules?)

Walk around Practice for Bonding... answers are on Arbuiso.com

1. Which are the polar molecules? _____

Which exhibit dipole attraction? _____

Which exhibit hydrogen bonding? _____

2. How many pairs of electrons are being shared in these molecules?

F₂ _____

O₂ _____

Cl₂ _____

N₂ _____

C₂H₂ _____ and _____

HCl _____

NaCl _____

3. Name all bonds in

C₂H₂ _____

CS₂ _____

4. Name all bonds in

KCl _____

MgSO₄·7H₂O _____

5. Gases are _____ + _____ Liquid is _____ Solid is _____

This is caused by _____

6. Draw Lewis Dot Diagrams for

CHBr ₃	CO ₂
O ₂	H ₂ O

7. Polar molecules are _____ NONPolar molecules are _____

8. Name all the bonds in... CHBr_3 has C-H _____ and C-Br _____

CO_2 _____

O_2 _____ H_2O _____

9. Name all of the bonds in.. KCl _____

SiO_2 _____ SCl_2 _____

BF_3 _____

10. Rank these bonds....	most polar $\rightarrow \rightarrow \rightarrow$	
HCl	HBr	HF
	HI	
	least polar $\rightarrow \rightarrow \rightarrow$	

11. Which of these compounds have ONLY ionic bonds? _____

12. Which of these molecules have radial symmetry? _____

BONUS: Relative oxidation numbers...

B1	MgSO_4	Mg	S	O	O	O	O
B2	CH_4	C	H	H	H	H	
B3	H_2O	H	H	O			
B4	CS_2	C	S	S			
B5	CO_2	C	O	O			
B6	CO	C	O				

Walk around Practice for Bonding... answers are on Arbuiso.com

1. Which are the polar molecules? H_2O CHCl_3 SCl_2

Which exhibit dipole attraction? SCl_2

Which exhibit hydrogen bonding? H_2O CHCl_3

2. How many pairs of electrons are being shared in these molecules?

F_2 one

O_2 two

Cl_2 one

N_2 three

C_2H_2 three and one

HCl one

NaCl none are shared in an ionic bond

3. Name all bonds in

C_2H_2 The C to C bond is triple nonpolar covalent, the C to H bond is single polar covalent

CS_2 The C to S bonds are both double NON polar covalent (same electronegativity, no guessing)

4. Name all bonds in

KCl Just ionic

$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ Here, Ionic, polar covalent, hydrogen bonds, and single polar covalent bonds too.

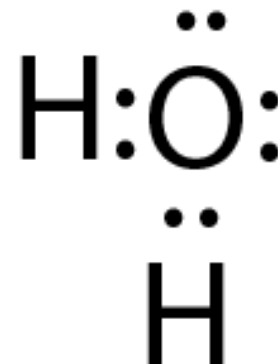
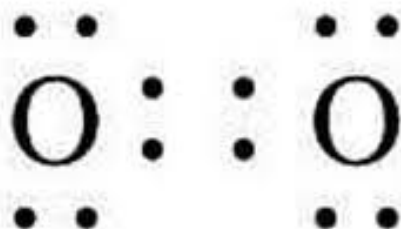
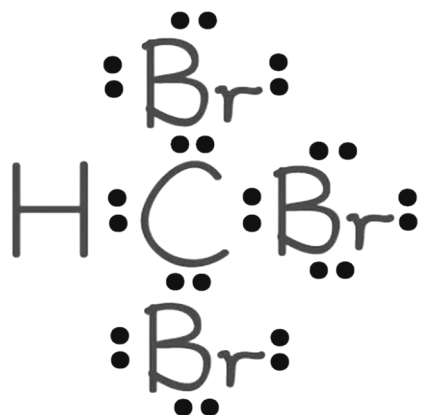
5. Gases are $\text{F}_2 + \text{Cl}_2$

Liquid is Br_2

Solid is I_2

This is caused by The intermolecular attraction known as electron dispersion attraction

Draw Lewis Dot Diagrams for CHBr_3 CO_2 O_2 H_2O



7. Polar molecules are CHBr_3 and H_2O NONPolar molecules are CO_2 and O_2

8. Name all the bonds in... CHBr_3 has C-H single polar covalent and C-Br single polar covalent

CO_2 double polar covalent O_2 double nonpolar covalent H_2O two single polar covalent

9. Name all of the bonds in.. KCl ionic SiO_2 two double polar covalent

SCl_2 two double polar covalent BF_3 three single polar covalent

10. Rank these bonds....	most polar $\rightarrow \rightarrow \rightarrow$	HF	Greatest difference in electronegativity
HCl HBr HF HI		HCl	
		HBr	
	least polar $\rightarrow \rightarrow \rightarrow$	HI	Least difference in electronegativity

11. Which of these compounds have ONLY ionic bonds? KCl and MgCl_2 and NaCl

12. Which of these molecules have radial symmetry? C_2H_4 CO_2 CS_2 CCl_4

BONUS: Relative oxidation numbers...

B1	MgSO_4	Mg^{+2} S^{+6} O^{-2} O^{-2} O^{-2} O^{-2}
B2	CH_4	C^{+4} H^{-1} H^{-1} H^{-1} H^{-1}
B3	H_2O	H^{+1} H^{+1} O^{-2}
B4	CS_2	C^{+4} S^{-2} S^{-2}
B5	CO_2	C^{+4} O^{-2} O^{-2}
B6	CO	C^{+2} O^{-2}

BONUS #2: CO has a double polar covalent bond AND a coordinate covalent bond

O_3 has a resonating bond.