

## Nomenclature practice sheet.

Remember:

- Covalent compounds require prefixes (with the exception of binary compounds of hydrogen and acids), ionic don't (though some common names of ionic compounds include prefixes).
- Acids have their own system of nomenclature
- Ionic compounds of transition metals require roman numerals indicating the charge on the metal (there are some exceptions)

1. Name the following binary covalent compounds:

$\text{CCl}_4$ ,  $\text{SO}_2$ ,  $\text{SO}_3$ ,  $\text{PF}_3$ ,  $\text{P}_3\text{F}_4$ ,  $\text{SF}_2$ ,  $\text{SF}_4$ ,  $\text{S}_2\text{F}_4$ ,  $\text{P}_2\text{Cl}_4$ ,  $\text{S}_3\text{Cl}_2$ ,  $\text{PBr}_3$ ,  $\text{P}_4\text{O}_6$ ,  $\text{N}_2\text{O}_5$ ,  $\text{P}_4\text{S}_3$ ,  $\text{CBr}_4$ ,  $\text{NBr}_3$ ,  $\text{ClF}$ ,  $\text{ClF}_3$ ,  $\text{SiCl}_4$ ,  $\text{P}_3\text{S}_5$ ,  $\text{ClO}_2$ ,  $\text{N}_2\text{O}_4$ ,  $\text{NBr}_3$ ,  $\text{S}_2\text{I}_2$ ,  $\text{S}_2\text{F}_{10}$ ,  $\text{S}_3\text{Cl}_2$ ,  $\text{ClF}_5$ ,  $\text{N}_2\text{F}_2$ ,

2. Name the following binary ionic compounds:

$\text{K}_2\text{S}$ ,  $\text{ScF}_3$ ,  $\text{TiF}_2$ ,  $\text{PbO}_2$ ,  $\text{TiCl}_4$ ,  $\text{VBr}_2$ ,  $\text{SnO}_2$ ,  $\text{VF}_5$ ,  $\text{CrCl}_2$ ,  $\text{CrBr}_3$ ,  $\text{MnI}_2$ ,  $\text{TiO}$ ,  $\text{CrO}_2$ ,  $\text{V}_2\text{O}_3$ ,  $\text{CoF}_2$ ,  $\text{NiBr}_2$ ,  $\text{CuBr}$ ,  $\text{Sc}_2\text{S}_3$ ,  $\text{ZnCl}_2$ ,  $\text{FeBr}_2$ ,  $\text{Co}_3\text{O}_4$ ,  $\text{NiO}$ ,  $\text{SrCl}_2$ ,  $\text{NiS}_2$ ,  $\text{Sc}_2\text{O}_3$ ,  $\text{CrO}_3$ ,  $\text{AgF}$ ,  $\text{Ag}_2\text{O}$ ,  $\text{NaF}$ ,  $\text{Li}_2\text{O}$ ,  $\text{SnO}$ ,  $\text{PbCl}_2$ ,  $\text{AlBr}_3$ ,  $\text{MgBr}_2$ ,  $\text{BeBr}_2$ ,  $\text{BaBr}_2$ .

3. Pick five main group metals and ten polyatomic ions. Give the formula and name for the compound formed by the combination of each metal with every polyatomic ion. If you don't know how metals and polyatomic ions combine to form ionic compounds go to [www.dorjegurung.com/woodside/IB\\_Chemistry/index.htm](http://www.dorjegurung.com/woodside/IB_Chemistry/index.htm) and follow the link for Nomenclature of Inorganic Compounds.
4. Pick ten transition metals and five polyatomic ions. You may want to pick a range of transition metals, not just those that have fixed charges. You may want to choose a different set of polyatomic ions from above so as to get practice with as many different ones as you can. Give the formula and name for the compound formed by the combination of each transition metal with every polyatomic ion.
5. For transition metals you picked in 4 which have variable charge, do question 4 using a different charge for the metal.
6. For transition metals you picked in 4 which have variable charge, do question 4 using yet a different charge for the metal if they do have a third charge that they can exist in.