Nomenclature practice sheet 2

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, and
- Ionic compounds of transition metals require roman numerals indicating the charge on the metal (with some exceptions).

1. Name the following binary covalent compounds:

   CCl_4, SO_2, SO_3, PF_3, P_3F_4, SF_2, SF_4, S_2F_4, P_2Cl_4, S_3Cl_2, PBr_3, P_4O_6, N_2O_5, P_4S_3, CBr_4, NBr_3, ClF, ClF_3, $SiCl_4$, P_3S_5, ClO_2, N_2O_4, NBr_3, S_2I_2, S_2F_{10}, S_3Cl_2, ClF_5, N_2F_2,

2. Name the following binary ionic compounds:

   K_2S, ScF_3, TiF_2, PbO_2, $TiCl_4$, VBr_2, SnO_2, VF_5, $CrCl_2$, $CrBr_3$, MnI_2, TiO, CrO_2, V_2O_3, CoF_2, $NiBr_2$, CuBr, Sc_2S_3, $ZnCl_2$, $FeBr_2$, Co_3O_4, NiO, $SrCl_2$, NiS_2, Sc_2O_3, CrO_3, AgF, Ag_2O, NaF, Li_2O, SnO, $PbCl_2$, $AlBr_3$, $MgBr_2$, $BeBr_2$, $BaBr_2$.

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 polytomic ion. If you don't know how metals and polyatomic ions combine to form ionic compounds go to www.dorjegurung.com\chemistry\IB_year1\Pre_knowledge.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. Additonally, you may want to choose a different set of polyatomic ions from above so that you get practice with naming many more ions. Give the formula and name for the compound formed by the combination of each transition metal with every polyatomic ion.
5. Do the same as in preceding question using a different set of five transition metal ions and any five polyatomic ions.
6. Repeat 4 again with yet another set of 5 different transition metal ions.