NAME.....

USEFUL VALENCIES, IONS AND FORMULA

METALS

ION = +1 VALENCY OF 1		ION = +2 VALENCY OF 2		ION = +3 VALENCY OF 3	
Li^{+}	lithium	Mg^{+2}	magnesium	Al^{+3}	aluminium
Na^{+}	sodium	Ca^{+2}	calcium	Fe^{+3}	iron (III)
K^{+}	potassium	Ba^{+2}	barium		
Cu^{+}	copper (I)	Fe^{+2}	iron (II)		
Ag^{+}	silver	Ni^{+2}	nickel		
		Cu^{+2}	copper (II)		
H^{+}	hydrogen *	Zn^{+2}	zinc		
NH_4^{+}	ammonium *	Pb^{+2}	lead (II)		
		Hg^{+2}	mercury (II)		
		Sn^{+2}	tin (II)		
		Sr^{+2}	strontium		
		Co^{+2}	cobalt		
		Cd^{+2}	cadmium		
		Mn^{+2}	manganese		

* these ions are not actually of metals but behave as such by forming positive ions

NON - METALS

ION = -1 VALENCY OF 1		ION = -2 VALENCY OF 2		ION = -3 VALENCY OF 3	
F^{-1}	fluoride	O^{-2}	oxide	N^{-3}	nitride
Cl^{-1}	chloride	S^{-2}	sulfide	PO_4^{-3}	Phosphate
H^{-1}	hydride	SO_3^{-2}	sulfite	P^{-3}	Phosphide
Br^{-1}	bromide	SO_4^{-2}	sulfate		
I^{-1}	iodide	CO_3^{-2}	carbonate		
NO_2^{-1}	nitrite	CrO_4^{-2}	chromate		
MnO_4^{-1}	permanganate	$Cr_2O_7^{-2}$	dichromate		
		O_2^{-2}	Peroxide		
OH^{-1}	hydroxide			**VALENCY OF 4**	
NO_3^{-1}	nitrate			C	carbon
HCO_3^{-1}	hydrogencarbonate			Si	silicon
HSO_4^{-1}	hydrogensulphate			These do not form ions	
CH_3COO^{-1}	ethanoate				
CN^{-1}	cyanide				
$H_2PO_4^{-1}$	dihydrogenphosphate				

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OTHER FORMULAE

The formulae of ionic compounds (compounds formed between metals and non-metals) is given by balancing the relative numbers of positive and negative ions needed to achieve a neutral compound.

The formula of acids and some covalent molecules are not easy to predict using valencies. The following should be learnt as a matter of course.

Common Gases		Common Acids		Other	
H_2	hydrogen	HCl	hydrochloric	H_2O	water (l)
O_2	oxygen	HNO_3	nitric	NH_3	ammonia (g)
N_2	nitrogen	H_2SO_4	sulphuric	F_2	fluorine (g)
Cl_2	chlorine	H_3PO_4	phosphoric	Br_2	bromine (l)
CO_2	carbon dioxide	HCOOH	methanoic (weak)	I_2	iodine (s)
SO_2	sulphur dioxide	CH_3COOH	ethanoic (weak)	CO	carbon monoxide (g)
CH_4	methane	H_2CO_3	carbonic (weak)	C_2H_4	ethene (g)

REACTIVITY SERIES OF SOME METALS

K > Na > Li > Ca > Mg > Al > [C] > Zn > Fe > Pb > [H] > Cu > Ag > Au