

Periodic Table WS

Use the periodic table on the inside front cover of your textbook to complete the following table
Table 1 Properties and Descriptions of Elements

Element name	Chemical symbol	Atomic number	Group number	Period number	Metal (m) or nonmetal (nm)	State at SATP
1. chlorine						
2. magnesium						
3.		30				
4.	N					
5.			17	5		
6.		79				
7.				3		
8. thorium			—			
9.			12			liquid
10.	Br					
11. argon						
12.			11	5		
13.		19				
14. calcium						
15.			1			gas
16.		58	—			

Bohr Models of Atoms and Ions WS

Element name and symbol	Bohr diagram of atom	# of valence electrons	Bohr diagram of ion	Ionic charge
lithium				
beryllium				
F				
magnesium				
sulfur				

Atoms vs Ions WS

Symbol	Atom or Ion	Number of Protons	Number of Electrons	Electric Charge
Li ⁺		3	2	1+
C		6	6	0
F ⁻		9	10	1-
Mg ²⁺				
K ⁺				
Li				
S ²⁻				
He				
		18		0
		8		2-
		17		1-
		11		0
Ca ²⁺			18	
Fe ³⁺			23	
Fe ²⁺			24	
			78	1+
			78	2+
		82	78	
		30	30	

Naming Ionic Compounds WS

1. Write the formulas for the following compounds.

- (a) magnesium oxide _____
- (b) sodium fluoride _____
- (c) aluminium nitride _____
- (d) potassium sulfide _____
- (e) lithium iodide _____
- (f) calcium bromide _____
- (g) beryllium oxide _____
- (h) nickel (II) chloride _____
- (i) magnesium nitride _____
- (j) aluminium sulfite _____
- (k) copper(I) bromide _____
- (l) tin(II) iodide _____
- (m) iron(III) chloride _____
- (n) calcium phosphate _____
- (o) lead(II) oxide _____
- (p) lead(IV) fluoride _____
- (q) tin(IV) bromide _____
- (r) copper(II) sulfide _____
- (s) iron(II) oxide _____
- (t) calcium nitrate _____

2. Write the names for the following compounds.

- (a) Li_2O _____
- (b) AlCl_3 _____
- (c) MgS _____
- (d) $\text{Ca}(\text{NO}_3)_2$ _____
- (e) KBr _____
- (f) BeF_2 _____
- (g) Na_3N _____
- (h) Al_2O_3 _____
- (i) CuCl_2 _____
- (j) FeBr_3 _____
- (k) PbSO_3 _____
- (l) SnO_2 _____
- (m) Na_2S _____
- (n) Mg_3P_2 _____
- (o) NiO _____
- (p) CuI _____
- (q) PbCl_4 _____
- (r) FeP _____
- (s) CaF_2 _____
- (t) K_3PO_4 _____

Naming Molecular Compounds WS

1. Write the formulas for the following compounds.

(a) carbon dioxide _____

(b) silicon dioxide _____

(c) water _____

(d) carbon disulfide _____

(e) sulfur trioxide _____

(f) ammonia _____

(g) carbon tetrachloride _____

(h) hydrogen peroxide _____

(i) methane _____

(j) ozone _____

(k) diphosphorus trioxide _____

(l) nitrogen monoxide _____

(m) chlorine dioxide _____

(n) dinitrogen monoxide _____

(o) carbon monoxide _____

(p) arsenic tribromide _____

(q) phosphorus pentabromide _____

(r) dinitrogen tetroxide _____

(s) silicon carbide _____

(t) sulfur dioxide _____

2. Write the names for the following compounds.

(a) CF_4 _____

(b) NH_3 _____

(c) PBr_3 _____

(d) O_3 _____

(e) $\text{F}_2(\text{g})$ _____

(f) CS_2 _____

(g) N_2O_4 _____

(h) H_2O_2 _____

(i) CO _____

(j) SiC _____

(k) P_2O_5 _____

(l) CH_4 _____

(m) SO_3 _____

(n) H_2O _____

(o) SiO_2 _____

(p) PCl_5 _____

(q) $\text{I}_2(\text{g})$ _____

(r) NO_2 _____

(s) SF_4 _____

(t) $\text{H}_2(\text{g})$ _____

Molecular and Acid Naming WS

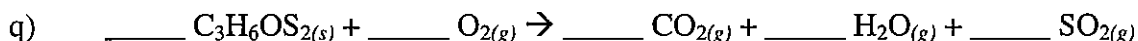
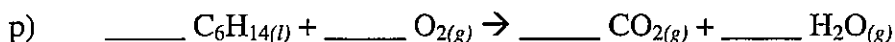
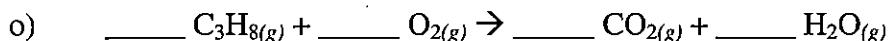
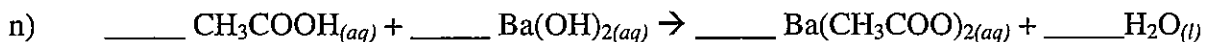
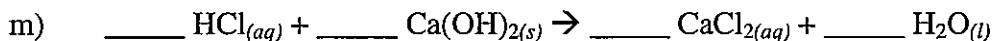
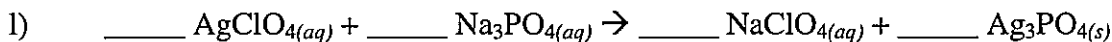
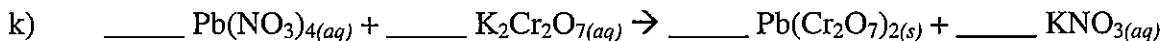
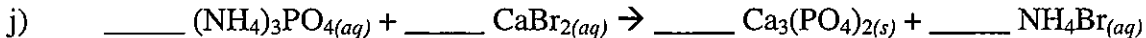
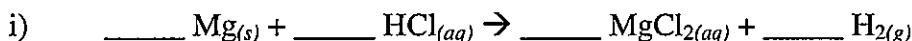
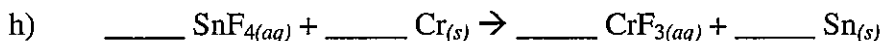
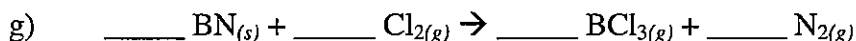
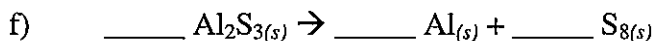
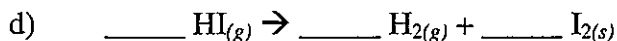
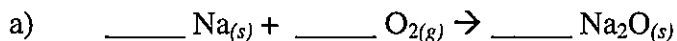
Formula		IUPAC Name
1.	$\text{NO}_3(\text{g})$	
2.		ammonia
3.	$\text{H}_2\text{S}(\text{g})$	
4.		oxygen difluoride
5.		methane
6.	$\text{CH}_3\text{OH}(\text{l})$	
7.	$\text{HBr}(\text{aq})$	
8.		sulphurous acid
9.	$\text{CS}_2(\text{l})$	
10.		hydrosulphuric acid
11.	$\text{SO}_2(\text{g})$	
12.		dinitrogen tetraoxide
13.	$\text{HNO}_2(\text{aq})$	
14.		carbon monoxide
15.	$\text{C}_{12}\text{H}_{22}\text{O}_{11}(\text{s})$	
16.		hypochlorous acid
17.		diarsenic trioxide
18.		ethanol
19.	$\text{H}_2\text{CO}_3(\text{aq})$	
20.		perchloric acid
21.	$\text{P}_4\text{O}_{10}(\text{s})$	
22.		sulphur trioxide
23.	$\text{CF}_4(\text{l})$	
24.		silicon dioxide
25.	$\text{CH}_3\text{COOH}(\text{aq})$	

Acids, Molecular and Ionic Naming WS

	Class A, M or I	Formula	IUPAC Name
1.		$\text{H}_3\text{PO}_{4(\text{aq})}$	
2.			chlorous acid
3.			magnesium
4.		$\text{Al}_2(\text{SO}_4)_{3(\text{s})}$	
5.			magnesium chloride
6.		$\text{NH}_4\text{NO}_{2(\text{s})}$	
7.			phosphorus trihydride
8.		$\text{KNO}_{3(\text{s})}$	
9.			sodium nitrate
10.		$\text{HNO}_{2(\text{aq})}$	
11.		$\text{Al}(\text{OH})_{3(\text{s})}$	
12.			sodium sulphate
13.		$(\text{NH}_4)_2\text{SO}_{4(\text{s})}$	
14.		$\text{PbF}_{4(\text{s})}$	
15.			hydrogen peroxide
16.		$\text{PbO}_{(\text{s})}$	
17.			hydrofluoric acid
18.		$\text{KClO}_{(\text{s})}$	
19.			bromine
20.		$\text{N}_2\text{O}_{3(\text{g})}$	
21.		K_2CO_3	
22.			nitric acid
23.		$\text{HF}_{(\text{g})}$	
24.			sodium hydroxide
25.		$\text{NaHSO}_{3(\text{s})}$	

Balancing Reactions WS

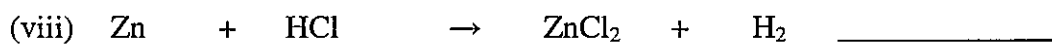
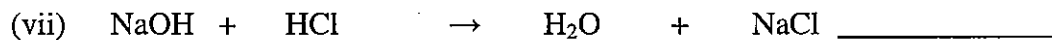
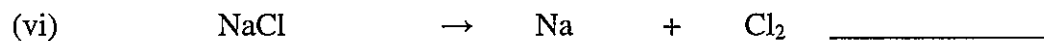
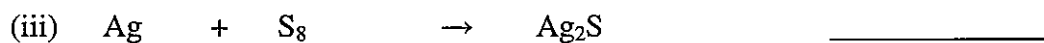
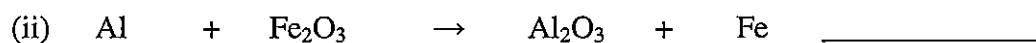
Balance the following chemical equations



Classifying Chemical Reactions WS

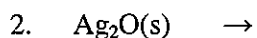
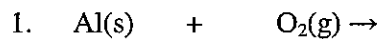
1. (a) Classify each of the following reactions as formation, simple decomposition, single replacement, or double replacement reactions.

(b) Balance each equation.

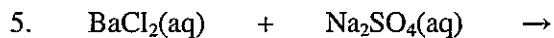


Predicting Chemical Reactions WS

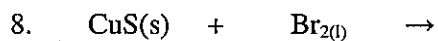
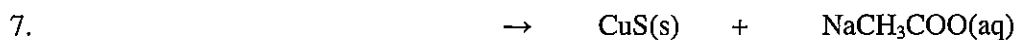
For each of the following questions, classify the reaction type (formation, simple decomposition, combustion, single replacement, double replacement, or other), and predict the balanced chemical equation.



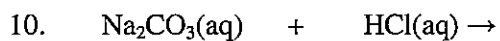
4. A strip of zinc metal is placed into a copper(II) nitrate solution.



6. Sulfuric acid is neutralized by aqueous sodium hydroxide.

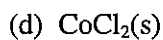
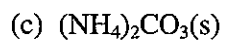
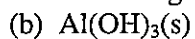


9. Propane burns in air.

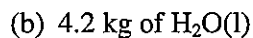
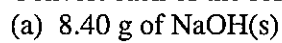


Amount, Mass and Molar Mass WS

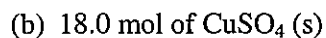
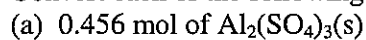
1. Determine the molar mass of each of the following substances:



2. Convert each of the following masses into its chemical amount:



3. Convert each of the following amounts into a mass in grams of the given substance:



4. Complete the following table.

Table 1 Molar Calculations

Substance	Molar mass (g/mol)	Mass (g)	Chemical amount (mol)
$\text{CaCl}_2(\text{s})$		18.6	
$\text{Al}_2\text{O}_3(\text{s})$			0.267
$\text{Mg}(\text{OH})_2(\text{s})$		35.00	
$\text{Na}_2\text{CO}_3(\text{s})$			0.150