

- 2.
- |                   |                          |
|-------------------|--------------------------|
| a) atom           | j) alkali metal          |
| b) pure substance | k) halogen               |
| c) element        | l) mixture               |
| d) molecule       | m) neutron               |
| e) ion            | n) heterogeneous mixture |
| f) protons        | o) bond                  |
| g) solution       | p) electron              |
| h) valence        | q) noble gas             |
| i) matter         | r) compound              |

- 3.
1. All matter is made of tiny particles called atoms.
  2. All particles of one substance are the same different substances have different particles
  3. The particles are always moving
  4. There are attractive forces between particles the closer together they are the most attracted they are



8. a)  $\text{Cu}_3\text{PO}_4$  copper (Cu) = 3 atoms  
phosphorous (P) = 1 "  
oxygen (O) = 4 "

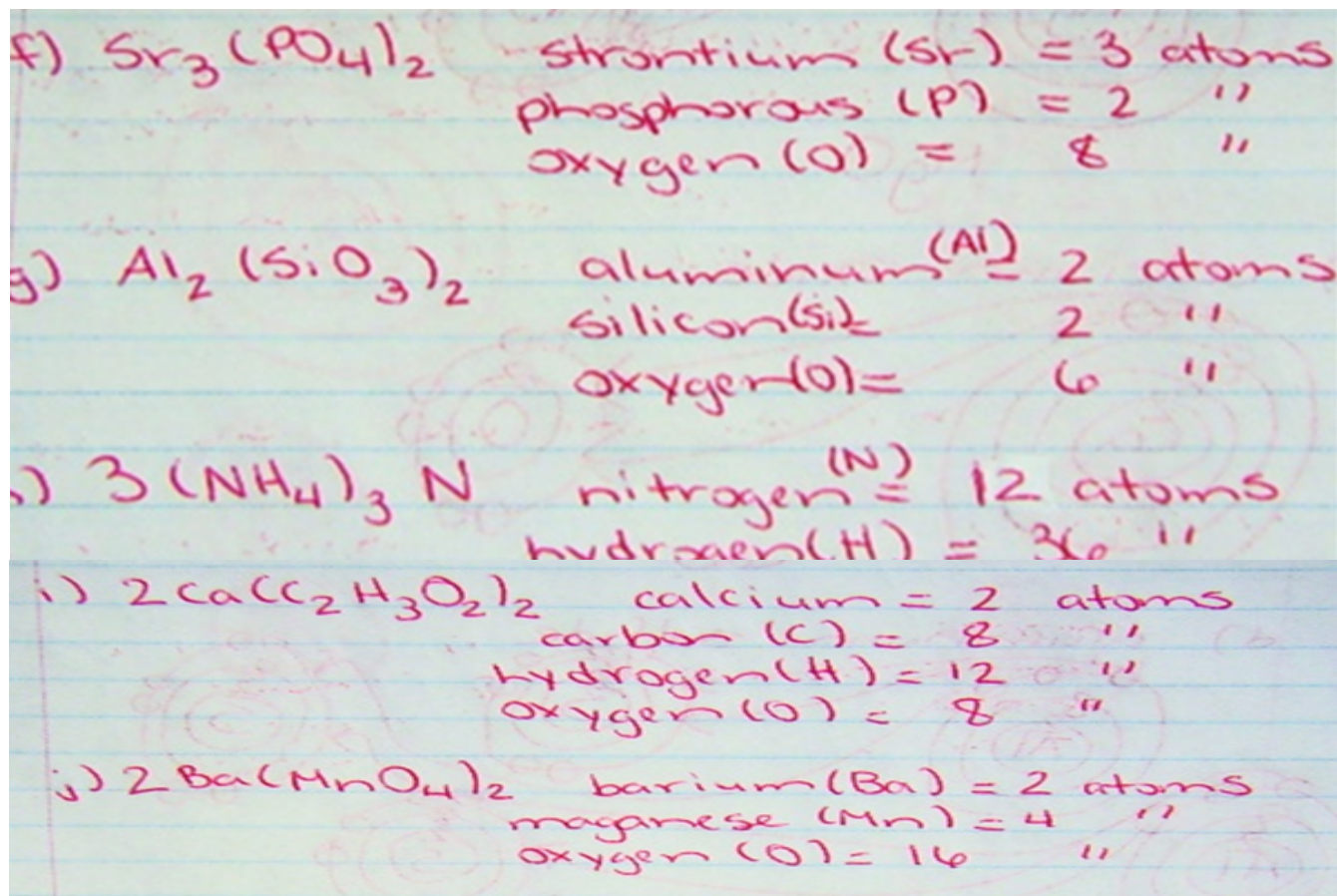
b)  $\text{NaN}_3$  sodium (Na) = 1 atom  
nitrogen (N) = 1 "  
oxygen (O) = 3 atoms

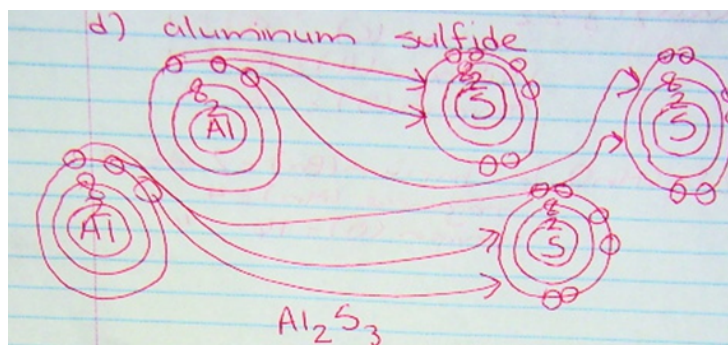
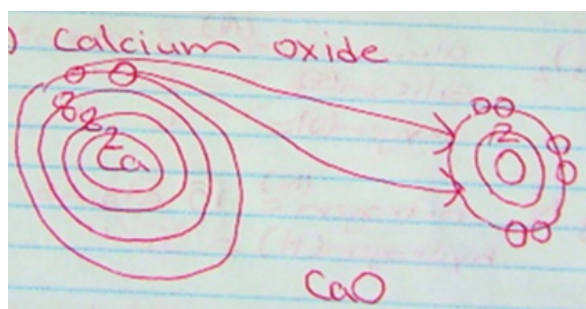
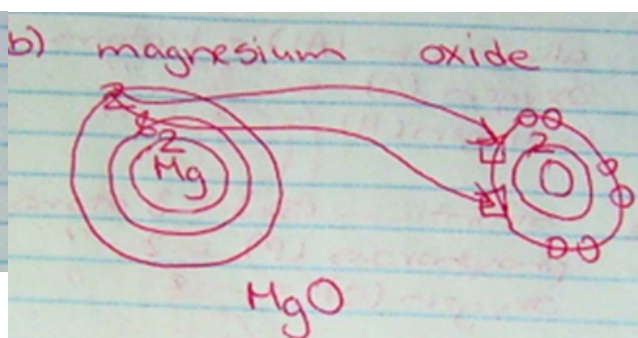
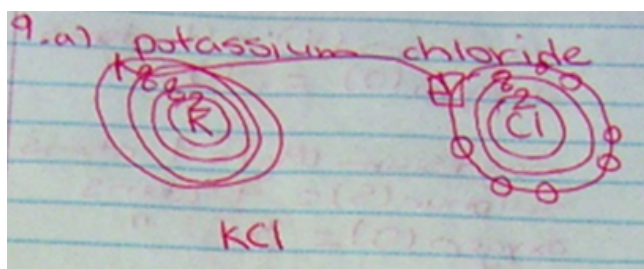
c)  $2\text{V}_2\text{O}_5$  vanadium (V) = 4 atoms  
oxygen (O) = 10 "

d)  $9\text{MgSO}_4$  magnesium (Mg) = 9 atoms  
sulphur (S) = 9 atoms  
oxygen (O) = 36 "

e)  $\text{Al}(\text{OH})_3$  aluminum (Al) = 1 atom  
oxygen (O) = 3 "  
hydrogen (H) = 3 "







Element	Symbol	Atomic #	Mass #	Standard atomic notation	# of protons	# of electrons	# of neutrons
Helium	He	2	4	${}^4_2\text{He}$	2	2	2
Oxygen	O	8	16	${}^{16}_8\text{O}$	8	8	8
Sodium	Na	11	23	${}^{23}_{11}\text{Na}$	11	11	12
Chlorine	Cl	17	37	${}^{37}_{17}\text{Cl}$	17	17	20
Calcium	Ca	20	42	${}^{42}_{20}\text{Ca}$	20	20	22

11. a)

Element	Ion
