Get out a Formula sheet!!

...and prepare for a 4!!

Bondtypes

N+N → C

M+N → I

TM NM MM → M

PERIODIC TABLE OF THE ELEMENTS

1 1A	2 2A	3 3B	4 4B	5 5B	6 6B	7 7B	8 8B	9 8B	10 8B	11 1B	12 2B	13 3A	14 4A	15 5A	16 6A	17 7A	18 8A
1 H Hydrogen 1.008																	2 He Helium 4.003
3 Li Lithium 6.941	4 Be Beryllium 9.012											5 B Boron 10.81	6 C Carbon 12.01	7 N Nitrogen 14.01	8 O Oxygen 16.00	9 F Fluorine 19.00	10 Ne Neon 20.18
11 Na Sodium 22.99	12 Mg Magnesium 24.31											13 Al Aluminum 26.98	14 Si Silicon 28.09	15 P Phosphorus 30.97	16 S Sulfur 32.07	17 Cl Chlorine 35.45	18 Ar Argon 39.95
19 K Potassium 39.10	20 Ca Calcium 40.08	21 Sc Scandium 44.96	22 Ti Titanium 47.88	23 V Vanadium 50.94	24 Cr Chromium 52.00	25 Mn Manganese 54.94	26 Fe Iron 55.85	27 Co Cobalt 58.93	28 Ni Nickel 58.69	29 Cu Copper 63.55	30 Zn Zinc 65.39	31 Ga Gallium 69.72	32 Ge Germanium 72.61	33 As Arsenic 74.92	34 Se Selenium 78.96	35 Br Bromine 79.90	36 Kr Krypton 83.80
37 Rb Rubidium 85.47	38 Sr Strontium 87.62	39 Y Yttrium 88.91	40 Zr Zirconium 91.22	41 Nb Niobium 92.91	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.1	45 Rh Rhodium 102.9	46 Pd Palladium 106.4	47 Ag Silver 107.9	48 Cd Cadmium 112.4	49 In Indium 114.8	50 Sn Tin 118.7	51 Sb Antimony 121.8	52 Te Tellurium 127.6	53 I Iodine 126.9	54 Xe Xenon 131.3
55 Cs Cesium 132.	56 Ba Barium 137.	57 La Lanthanum 138.	72 Hf Hafnium 178.	73 Ta Tantalum 181.0	74 W Tungsten 183.8	75 Re Rhenium 186.	76 Os Osmium 190.2	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.96	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
87 Fr Francium (223)	88 Ra Radium 226.0	89 Ac Actinium 227.0	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (263)	107 Bh Bohrium (262)	108 Hs Hassium (265)	109 Mt Meitnerium (266)	110 Uun Ununnilium (269)	111 Uuu Unununium (272)	112 Uub Ununbium (277)						

58 Ce Cerium 140.1	59 Pr Praseodymium 140.9	60 Nd Neodymium 144.2	61 Pm Promethium (145)	62 Sm Samarium 150.4	63 Eu Europium 152.0	64 Gd Gadolinium 157.3	65 Tb Terbium 158.9	66 Dy Dysprosium 162.5	67 Ho Holmium 164.9	68 Er Erbium 167.3	69 Tm Thulium 168.9	70 Yb Ytterbium 173.0	71 Lu Lutetium 175.0
90 Th Thorium 232.0	91 Pa Protactinium 231.0	92 U Uranium 238.0	93 Np Neptunium 237.0	94 Pu Plutonium (244)	95 Am Americium (243)	96 Cm Curium (247)	97 Bk Berkelium (247)	98 Cf Californium (251)	99 Es Einsteinium (252)	100 Fm Fermium (257)	101 Md Mendelevium (258)	102 No Nobelium (259)	103 Lr Lawrencium (262)

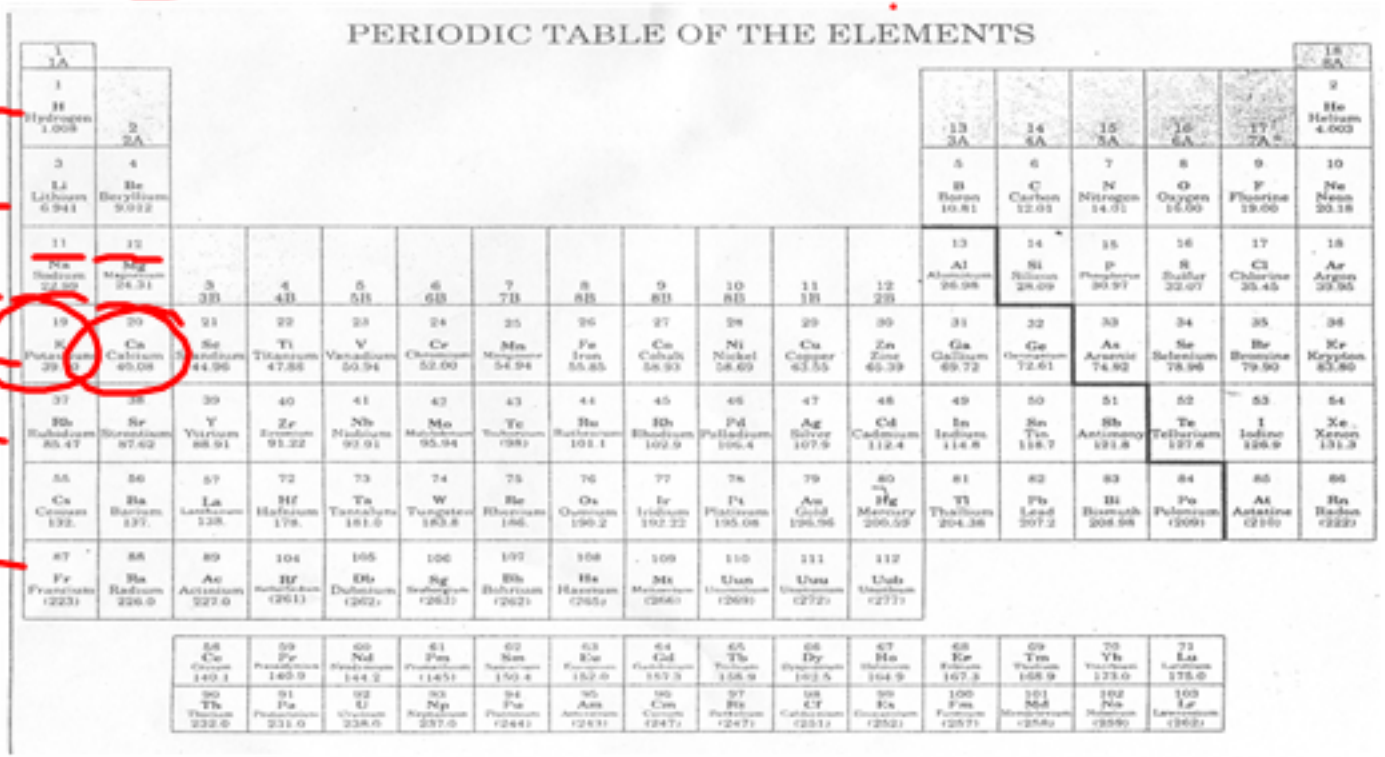
1. How are potassium atoms and calcium atoms similar?

A same number of valence electrons

B same oxidation number

C same number of protons

D same number of energy levels



2. An element on the far left side of the periodic table will have what property?

A a tendency to avoid reactions ?

B a tendency to share electrons when reacting

C a tendency to gain electrons when reacting

D a tendency to lose electrons when reacting

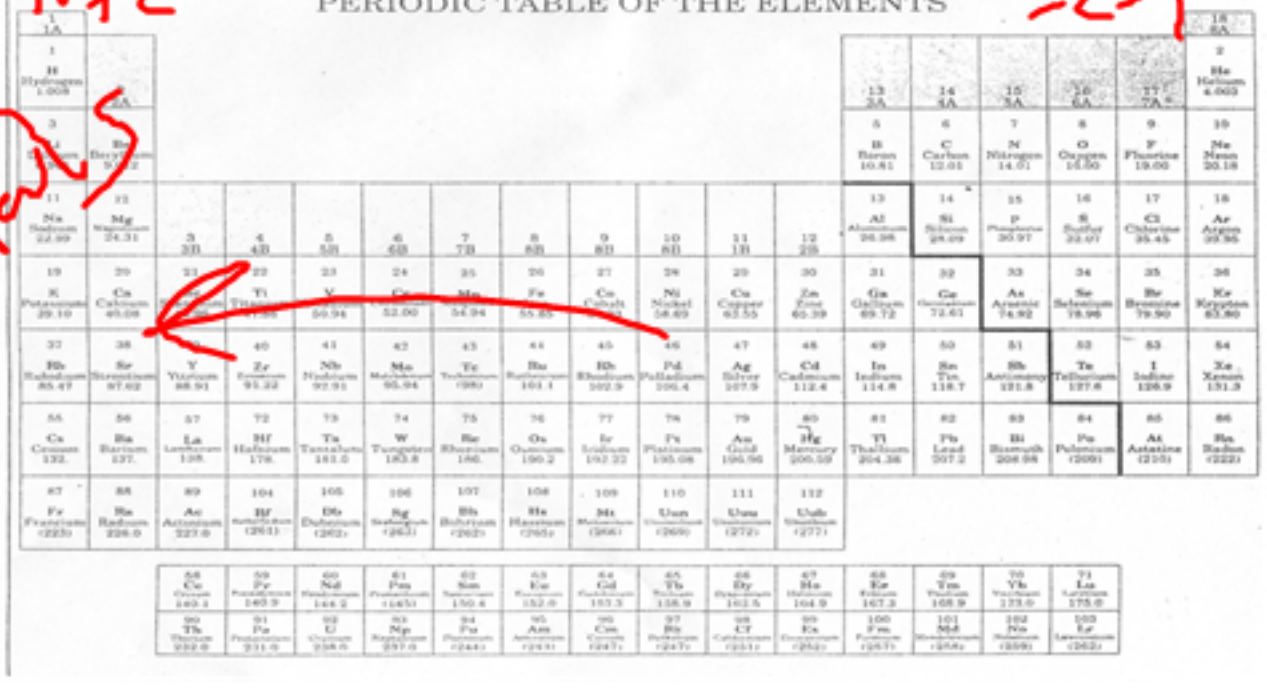
3+ 3+
3- 2-
0 +1

+1 +2

-2 -1

metals

PERIODIC TABLE OF THE ELEMENTS



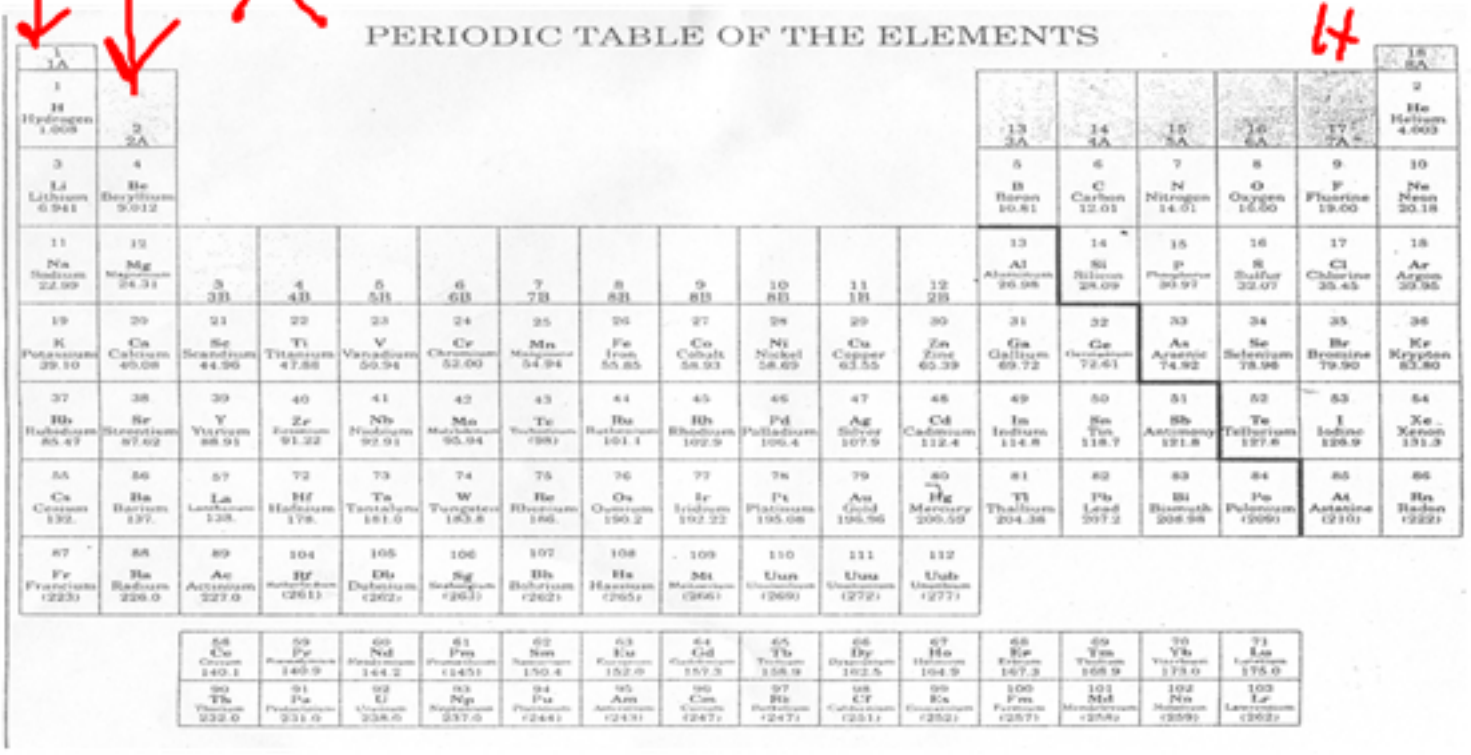
3. Which elements would ***most likely*** react with Group 2 (2A) metals?

A alkali metals

B halogens

C noble gases

D transition metals



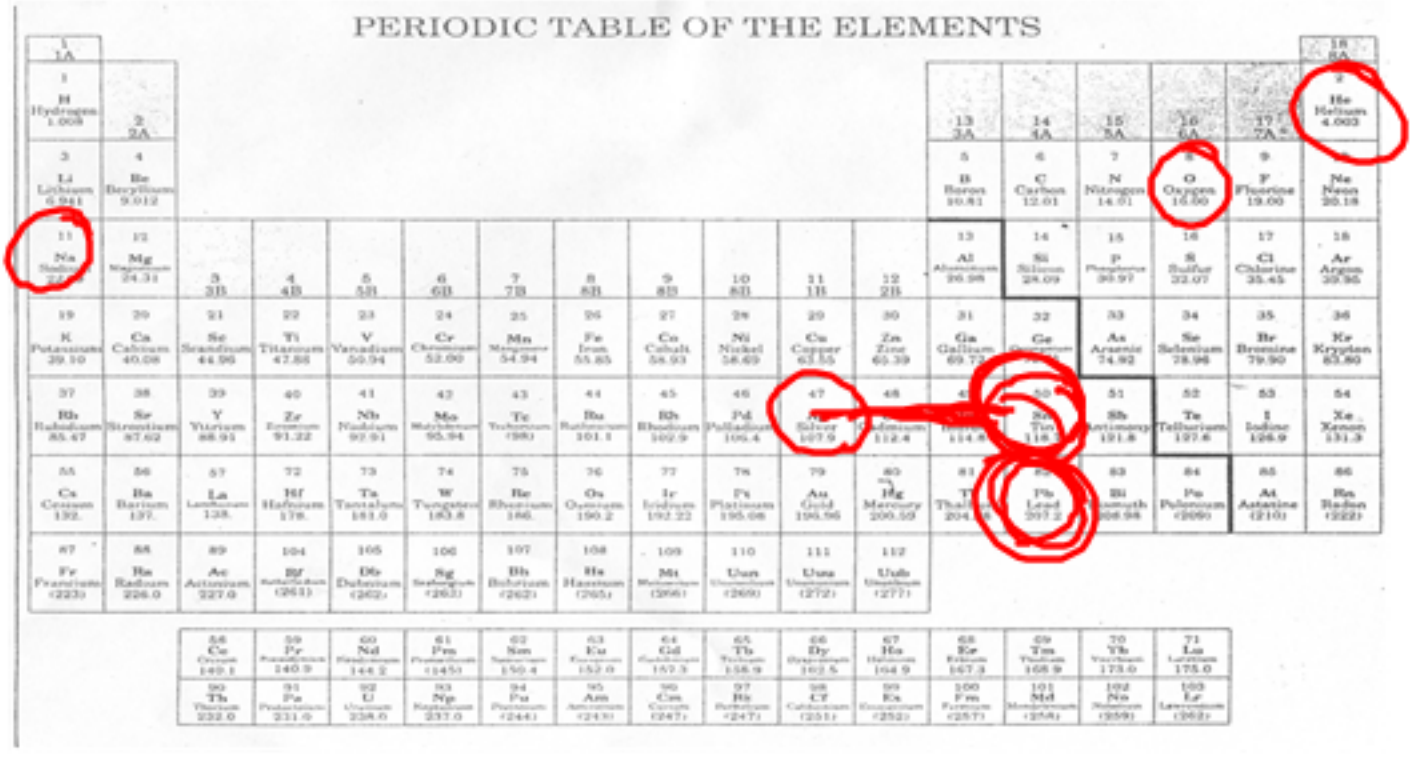
4. Which elements are in the same period?

A lead and sodium

B oxygen and helium

C silver and tin

D tin and lead



5. Which compound is formed when aluminum bonds with fluorine?

A AlF

B AlF_2

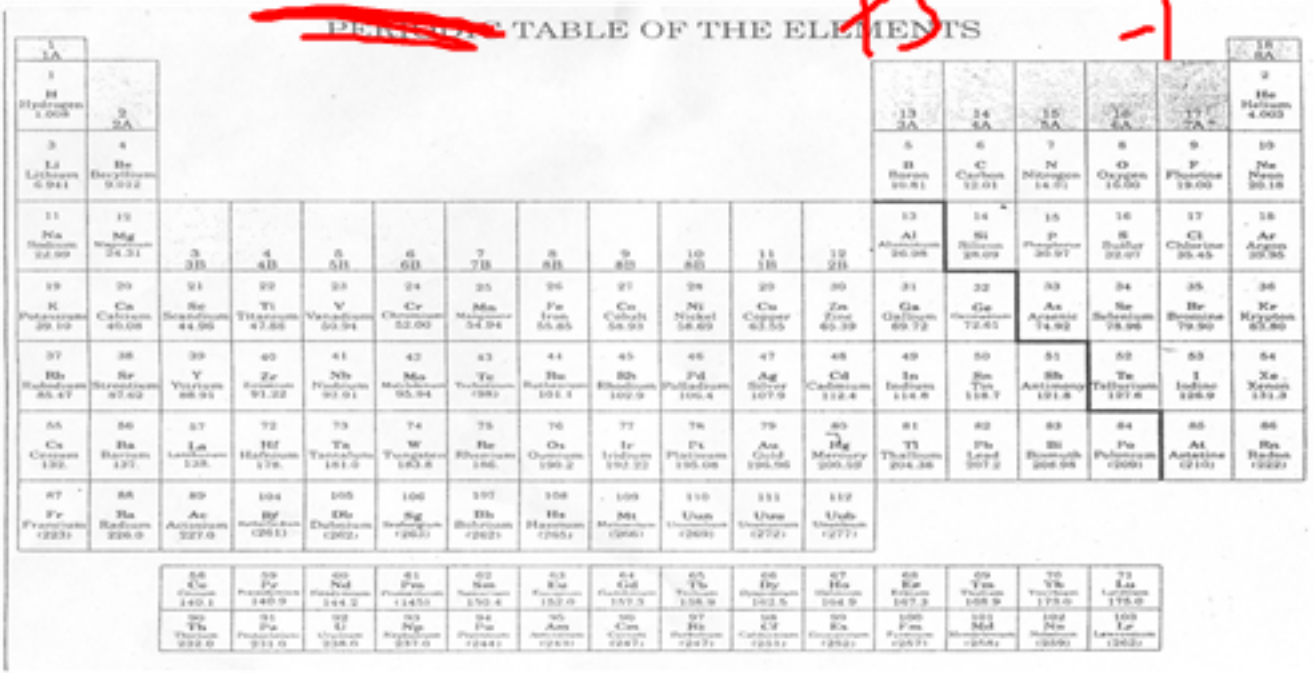
C AlF_3

D Al_3F

Al^{+3} F^{-1}

AlF_3

+3 -1



6. Which pair of elements will ***most readily*** form a compound?

A Li and Ne

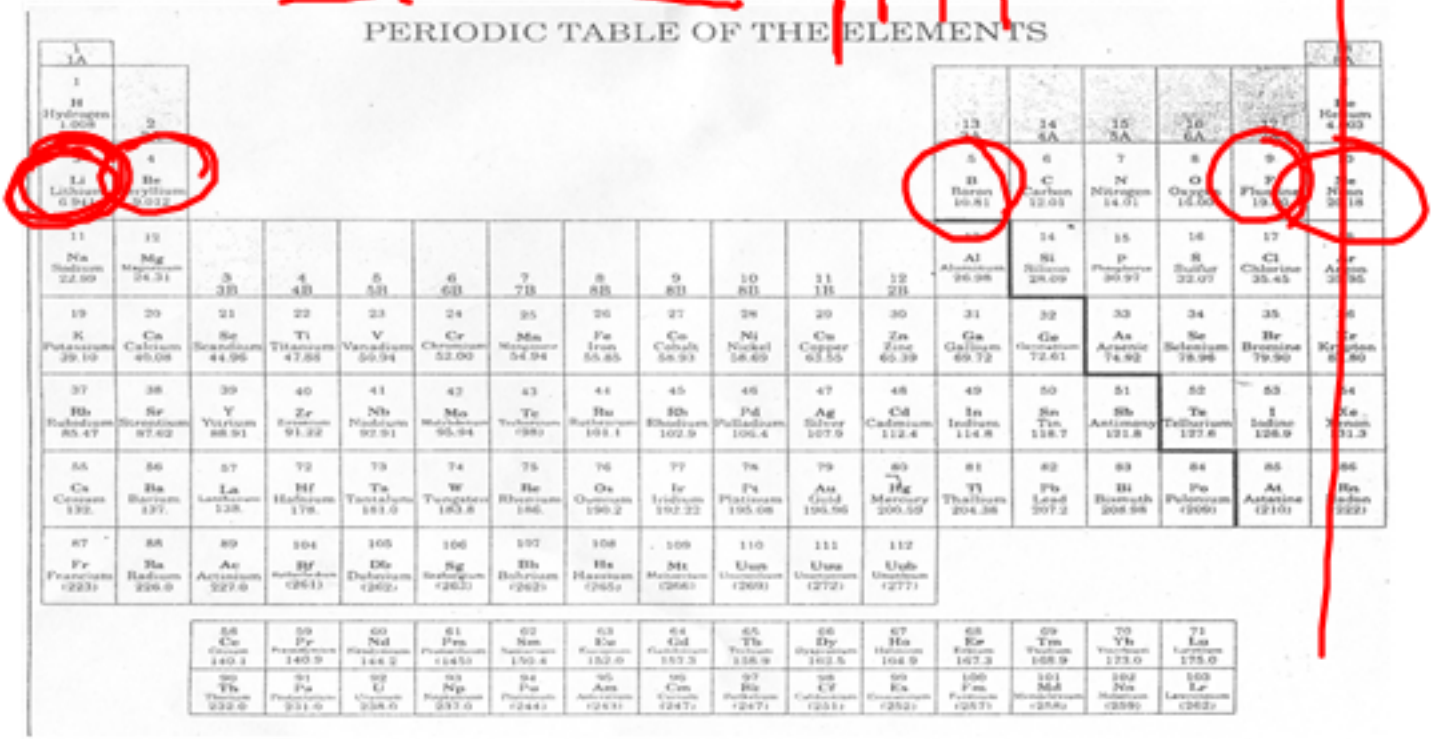
B Li and F

C Li and Be

D Li and B

M + N

M + metalloid



7. Which compound is ***most likely*** formed using covalent bonds?

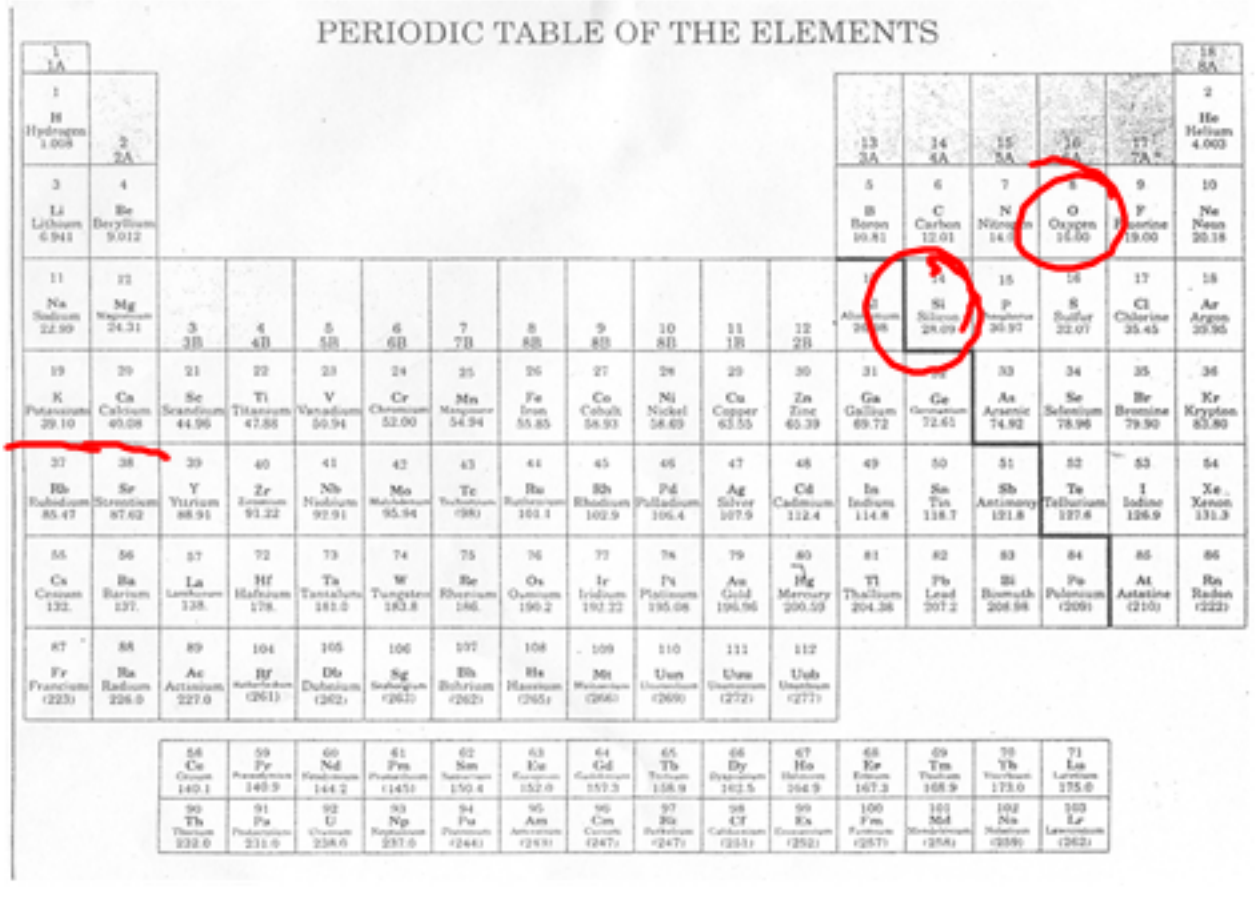
A SiO_2

B K_2O

C KBr

D $CaBr_2$

C → N + N



8. A teacher demonstrates a decomposition reaction. Which would be a correct demonstration?

$Mg + O \rightarrow MgO$

A burning magnesium in the presence of oxygen to produce magnesium oxide

B burning methane in the presence of oxygen to produce carbon dioxide and water

$CH_4 + O_2 \rightarrow CO_2 + H_2O$

C running an electrical current through water to produce hydrogen and oxygen

$H_2O \rightarrow H_2 + O_2$

D reacting iron with oxygen to produce iron(III) oxide

$Fe + O \rightarrow Fe_2O_3$

9. Which equation represents a double replacement reaction?

A $2KClO_3 \rightarrow 2KCl + 3O_2$ Dec.

B $CaBr_2 + Na_2CO_3 \rightarrow CaCO_3 + 2NaBr$ DR

C $Zn + S \rightarrow ZnS$ Syn

D $2Li + FeBr_2 \rightarrow 2LiBr + Fe$ SR

10. A chemical reaction is represented by this equation.

$$2Fe_2O_3 \rightarrow 4Fe + 3O_2$$

What is a product of this chemical reaction?

A FeO

B F

C O_2

D Fe_2O_3

11. Which is a correctly balanced chemical equation?

A $K_2CO_3 + BaCl_2 \rightarrow KCl + BaCO_3$

B $K_2CO_3 + BaCl_2 \rightarrow 2KCl + BaCO_3$

C $K_2CO_3 + 2BaCl_2 \rightarrow 2KCl + BaCO_3$

D $K_2CO_3 + 2BaCl_2 \rightarrow KCl + 2BaCO_3$

12. The reaction of CaO and water is exothermic. A student mixes the two chemicals in a test tube and touches the side of the test tube. Which statement describes the student's observation?

A The test tube becomes hot as heat is released.

B The test tube becomes hot as heat is absorbed.

C The test tube becomes cold as heat is released.

D The test tube becomes cold as heat is absorbed.

13. Solutions of lead(II) nitrate and potassium dichromate are mixed. The solution turns cloudy and yellow. Solid yellow particles fall to the bottom of the beaker. Which statement ***best*** describes this reaction?

(aq) + __(aq) → __(s) +

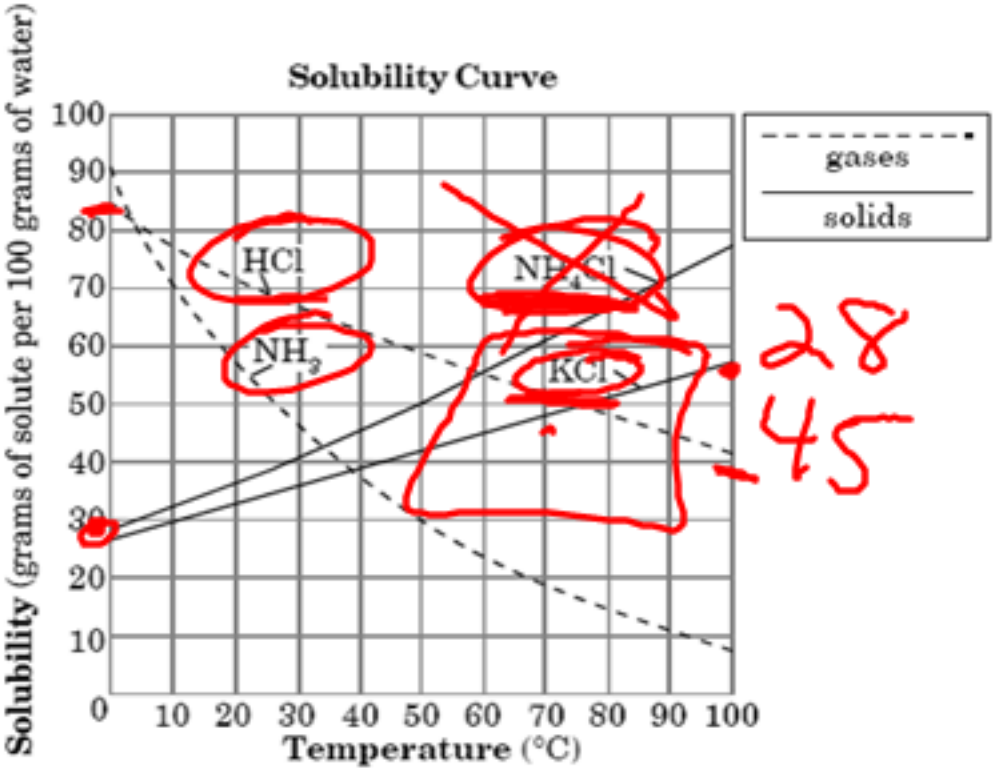
A A precipitate formed.

B A gas formed.

C The reaction is exothermic.

D The reaction is endothermic.

14.



Which solute exhibits the ***least*** response to temperature change?

A NH_4Cl

B KCl

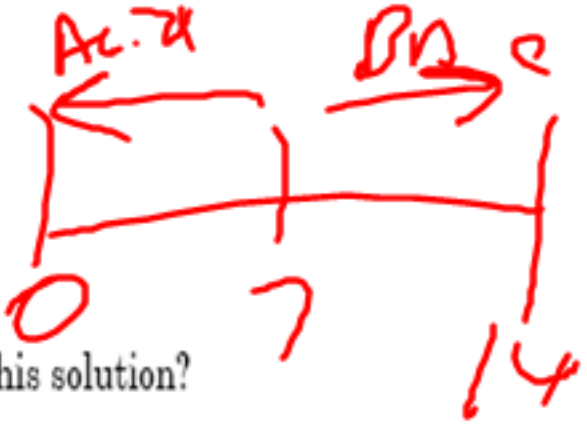
C HCl

D NH_3

15. In an experiment, a researcher collected the following information about a solution made from a certain food:

- pH = 3
- taste = sour
- reactivity = reacts with metals

Acid



Based on the information, what ***best*** describes this solution?

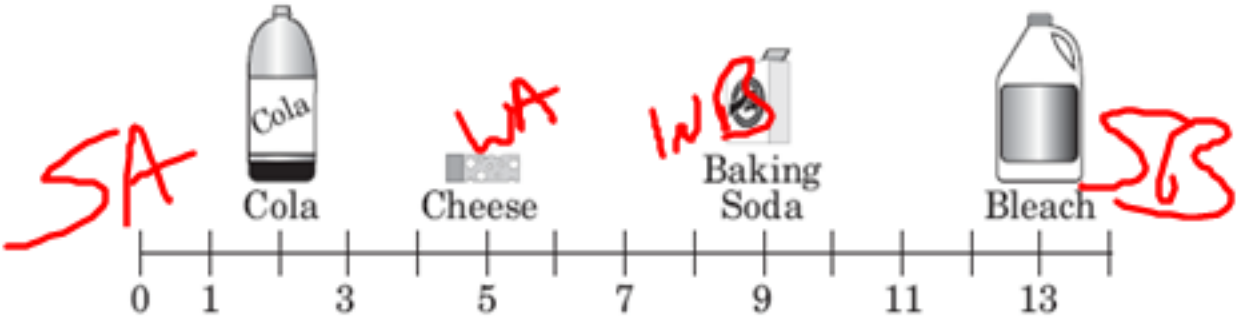
A acid

B base

C salt

D neutral

16. This is a pH chart of common materials.



Which substance is the ***most basic***?

Strongest

A Cola

B Cheese

C Baking Soda

D Bleach

17. Which action would ***most effectively*** slow down the dissolving of a sugar cube in water?

A cooling the water

B crushing the sugar Speed of

C heating the water " "

D stirring the water " "

18. Which substance in water will conduct electricity?

1/4

A corn starch

B salt

C sugar

D vegetable oil

BNS

19. The loss of an alpha particle has what effect on the atomic number and mass number of an atom?

He

$^{2}_{2}p$ $^{2}_{2}n$

A Atomic number and mass number both decrease.

B Atomic number increases; mass number decreases.

C Atomic number decreases; mass number increases.

D Atomic number and mass number both increase.

20. Which ***best*** contrasts nuclear fission and nuclear fusion?

A fission: splitting of small nuclei
fusion: joining of large nuclei

B fission: splitting of large nuclei
fusion: joining of small nuclei

C fission: joining of small nuclei
fusion: joining of large nuclei

D fission: needs extremely low temperatures
fusion: needs slightly higher temperatures than fission