

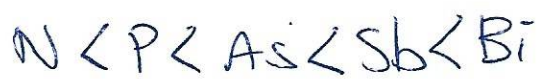
Periodic Trends Worksheet 1

Name: Key.
 Date: _____
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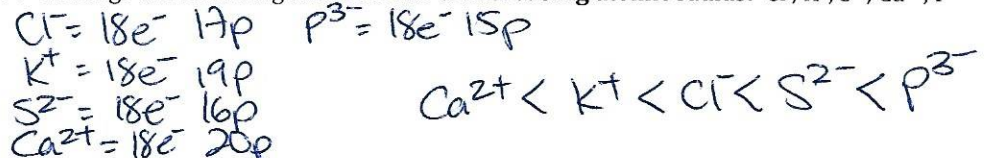
- The Periodic Table is organized according to what number? atomic #
- The columns on a periodic table are called the groups / families
- The rows on a periodic table are called the periods
- The most reactive metallic family is the alkali metals
- The most reactive non-metallic family is the halogens
- The family which has no reactive elements is the noble gases

7. Define the term **atomic radius**. Describe the periodic trend as you move UP a family. Describe the periodic trend as you move ACROSS (to the right of) a period.
atomic radius - half the distance between the nuclei of 2 adjacent atoms
 • as you move up a family = smaller atomic radius
 • as you move across a period = smaller atomic radius

8. Arrange the following atoms in order of **increasing** atomic radius: N, Sb, P, Bi, As



9. Arrange the following ions in order of **increasing** atomic radius: Cl⁻, K⁺, S²⁻, Ca²⁺, P³⁻



10. Define **ionization energy**.

The energy required to remove an electron from a neutral atom

11. What is the relationship between atomic radius and ionization energy?

As atomic radius increases, ionization energy decreases.

12. On the periodic table below, draw and label an arrow of increasing atomic radius. Then, draw and label an arrow of increasing ionization energy.

1 H																	2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	89 Ac	104 Rf	105 Ha	106 Sg	107 Ns	108 Hs	109 Mt	110	111	112	(113)	(114)	(115)	(116)	(117)	(118)

Handwritten arrows: One arrow points from top-left (H) to bottom-right (Fr) labeled "atomic radius". Another arrow points from top-right (He) to bottom-left (Fr) labeled "ionization energy".

13. Arrange the following atoms in order of **increasing** first ionization energy: Ba, Ca, Be, Sr, Mg

