Homework Assignment #27 – Periodic Trends

Name:_____ Period:_____

1) Define the following terms: **atomic radius** and **ionic radius**. Describe the periodic trend for each one.

2) Arrange the following atoms in order of **increasing** radius: N, Sb, P, Bi, As

3) Define the phrase **isoelectronic series**. Describe how sizes of ions change as you move from the most positively charged ion to the most negatively charged ion in an isoelectronic series.

4) Arrange the following ions in order of **increasing** radius: F^{-}, Na^{+}, O^{2-}, Mg^{2+}, N^{3-}

5) Define: **ionization energy** and **electronegativity**.

6) Show the direction in which each trend from #6 increases. Use the periodic table shown below to draw arrows of increasing value for each property.

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)

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

8) Arrange the following atoms in order of **increasing** electronegativity: Br, Sb, I, Te, Cl