

CONCEPT: PERIODIC TREND: ELECTRONEGATIVITY

- **Electronegativity (EN):** Measurement of an element's ability to attract electrons to itself.
 - In 1932, the American chemist Linus Pauling proposed electronegativity values for the elements.
 - **Periodic Trend:** Electronegativity _____ moving from left to right across a period and going up a group.
 - Exceptions in transition metals are because of variations in their *d* and *f* orbitals.

Electronegativity _____																	
1A (1)	2A (2)											3A (3)	4A (4)	5A (5)	6A (6)	7A (7)	8A (8)
1 H 2.1	Li 1.0	Be 1.5										B 2.0	C 2.5	N 3.0	O 3.5	F 4.0	
2 Na 0.9	Mg 1.2											Al 1.5	Si 1.8	P 2.1	S 2.5	Cl 3.0	
3 K 0.8	Ca 1.0	Sc 1.3	Ti 1.5	V 1.6	Cr 1.6	Mn 1.5	Fe 1.8	Co 1.9	Ni 1.9	Cu 1.9	Zn 1.6	Ga 1.6	Ge 1.8	As 2.0	Se 2.4	Br 2.8	Kr 3.0
4 Rb 0.8	Sr 1.0	Y 1.2	Zr 1.4	Nb 1.6	Mo 1.8	Tc 1.9	Ru 2.2	Rh 2.2	Pd 2.2	Ag 1.9	Cd 1.7	In 1.7	Sn 1.8	Sb 1.9	Te 2.1	I 2.5	Xe 2.6
5 Cs 0.7	Ba 0.9	La 1.3	Hf 1.3	Ta 1.5	W 1.7	Re 1.9	Os 2.2	Ir 2.2	Pt 2.2	Au 2.4	Hg 1.9	Tl 1.8	Pb 1.9	Bi 1.9	Po 2.0	At 2.2	
6 Fr 0.7	Ra 0.9																
7																	

EXAMPLE: Which of the following represents the most electronegative alkaline earth metal?

- a) Cs b) Li c) H d) Be e) Al

PRACTICE: Arrange the following elements in order of decreasing electronegativity: P, Na, N, Al

- a) P > Na > N > Al b) N > P > Na > Al c) Na > Al > P > N d) N > P > Al > Na e) P > N > Na > Al

PRACTICE: Between which two elements is the difference in electronegativity the greatest?

- a) C and Si b) Li and I c) Na and P d) K and F e) Br and Cl