

Name: _____

Period: _____

Unit 4: The Periodic Table- Funsheets

1. List the 7 diatomic molecules.
2. What is the difference between a monatomic ion and a polyatomic ion?
3. What types of elements typically form cations?
4. What types of elements typically form anions?
5. What is the charge of silver?
6. What is the charge of zinc?
7. What is the charge of cadmium?
8. Why do atoms become ions?
9. What is the octet rule?
10. What family have a full octet?
11. What two elements are the exception to the octet rule?
12. Define atomic radius.
13. Define ionic radius.
14. Define ionization energy.
15. Define electronegativity.

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Counting Atoms: How many oxygen atoms are in the following?

- 1) O_2 _____
- 2) $2 H_2SO_4$ _____
- 3) $5 Al(NO_3)_3$ _____
- 4) $Ba(OH)_2$ _____
- 5) $3 S_2O_4$ _____
- 6) $Ga(C_2H_3O_2)_3$ _____

Trends:

List the following elements in order of *increasing* atomic radius:

- 7) Al, Mg, S _____
- 8) Sn, F, Rb _____
- 9) Kr, Xe, He _____
- 10) Se, O, S _____

List the following elements in order of *decreasing* ionic radius:

- 11) Pb, Pb^{+2} , Pb^{+4} _____
- 12) S, S^{-2} _____
- 13) I, I^{-1} _____
- 14) Ti, Ti^{+2} , Ti^{+3} _____

List the following elements in order of *increasing* ionization energy:

- 15) Ag, Fr, Cl _____
- 16) Si, Ca, Cs _____
- 17) V, Mn, Zn _____
- 18) Cd, Zn, Hg _____

List the following elements in order of *decreasing* electronegativity:

- 19) As, Li, Rb _____
- 20) F, Na, S _____
- 21) Ga, B, Ba _____
- 22) Al, Ge, Sb _____

List the following elements in order of *increasing* metallic characteristic:

- 23) O, Sr, Ag _____
- 24) Ne, Li, C _____
- 25) Br, Hg, Os _____
- 26) Fr, K, Cs _____

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Periodic Trends

For each of the following, circle all the correct elements

1. Li	S	Si	metal
2. N	P	As	smallest ionization energy
3. O	C	N	highest ionization energy
4. K	Ca	Ga	largest atomic radius
5. S	Cl	Ar	Full octet
6. Al	Si	P	most electronegative
7. Cl	Br	I	least electronegative
8. Cl	Br	I	smallest atomic radius
9. Te	I	Xe	Largest atomic radius
10. Si	Ge	Sn	Smallest atomic radius
11. Na	K	Rb	smallest ionic radius
12. Cu ⁺¹	Cu ⁺²	Cu ⁺³	largest ionic radius
13. Li	Be	B	Most metallic characteristic
14. H	Li	Na	Most electronegative
15. Cs	B	Ba	Can form a charge of +3
16. Hg	Tl	Pb	Smallest atomic radii
17. Hg	Na	Ca	Can have various charges
18. Pb	Bi	Te	Lowest electronegativity
19. B	C	N	Can form a diatomic molecule
20. Ca	Ge	Se	Highest ionization energy
21. Ca	Ge	Se	four valence electrons
22. Mg	S	I	Forms a cation
23. Sb	Te	Sr	Smallest atomic radius
24. Br	Br ⁻¹		Largest ionic radius
25. Zn	Ag	Cd	Always forms a charge of +1
26. K	Ti	Cu	most reactive metal
27. Cr	O	Cl	Forms a cation
28. Na	K	Li	largest atomic radius
29. Na	Mg	Al	smallest atomic radius
30. N	O	F	least electronegative
31. Li	Be	B	lowest ionization energy
32. Na	Mg	Al	Most metallic characteristic
33. K	Al	O	Forms an anion
34. H	H ⁺¹	H ⁻¹	Largest ionic radius
35. Cu	Zn	Cd	Highest Ionization Energy