

Name _____

Answer Key**Valence Electrons and Ionic Charge**

(Honors Chemistry)

- For each of the following elements, show the configurations of the valence electrons only. Show which energy level they are in and indicate which sublevels they are in. See the examples below.

Element	Abbreviated Configuration	Valence Electrons	Element	Abbreviated Configuration	Valence Electrons
Mg	[Ne] 3s ²	2	Br	[Ar] 4s ² 4p ⁵	7
Ne	[He] 2s ² 2p ⁶	8	He	1s ²	2
O	[He] 2s ² 2p ⁴	6	F	[He] 2s ² 2p ⁵	7
Li	[He] 2s ¹	1	Na	[Ne] 3s ¹	1
Cl	[Ne] 3s ² 3p ⁵	7	Ca	[Ar] 4s ²	2
F	[He] 2s ² 2p ⁵	7	Ba	[Xe] 6s ²	2
P	[Ne] 3s ² 3p ³	5	Se	[Ar] 4s ² 4p ⁴	6
Al	[Ne] 3s ² 3p ¹	3	I	[Kr] 5s ² 5p ⁵	7
Br	[Ar] 4s ² 4p ⁵	7	Sr	[Kr] 5s ²	2
Ar	[Ne] 3s ² 3p ⁶	8	S	[Ne] 3s ² 3p ⁴	6
K	[Ar] 4s ¹	1	B	[He] 2s ² 2p ¹	3
Be	[He] 2s ²	2	H	1s ¹	1
N	[He] 2s ² 2p ³	5	Kr	[Ar] 4s ² 3d ¹⁰ 4p ⁶	8
C	[He] 2s ² 2p ²	4	Si	[Ne] 3s ² 3p ²	4

- Each of the following elements wants to become stable, just like a noble gas.
- Atoms are stable when they have the electron configurations of a noble gas.
- Atoms can lose or gain electrons to attain the configuration of a noble gas.

Element	Valence Electrons	Will the atom lose or gain electrons to become Stable?	How many electrons were lost or gained?	What noble gas configuration will it have?	Charge when becoming stable?
Mg	2	Lose	2	Neon	Mg ²⁺
O	6	Gain	2	Neon	O ²⁻
Li	1	Lose	1	Helium	Li ⁺
Cl	7	Gain	1	Argon	Cl ⁻
F	7	Gain	1	Neon	F ⁻
P	5	Gain	3	Argon	P ³⁻
Al	3	Lose	3	Neon	Al ³⁺
Br	7	Gain	1	Krypton	Br ⁻
Na	1	Lose	1	Neon	Na ⁺
K	1	Lose	1	Argon	K ⁺
Be	2	Lose	2	Helium	Be ²⁺
N	5	Gain	3	Neon	N ³⁻
C	4	Lose	4	Helium	C ⁴⁺
Ca	2	Lose	2	Argon	Ca ²⁺
Ba	2	Lose	2	Xenon	Ba ²⁺
Se	6	Gain	2	Krypton	Se ²⁻
I	7	Gain	1	Xenon	I ⁻
Sr	2	Lose	2	Krypton	Sr ²⁺
S	6	Gain	2	Argon	S ²⁻
B	3	Lose	3	Helium	B ³⁺