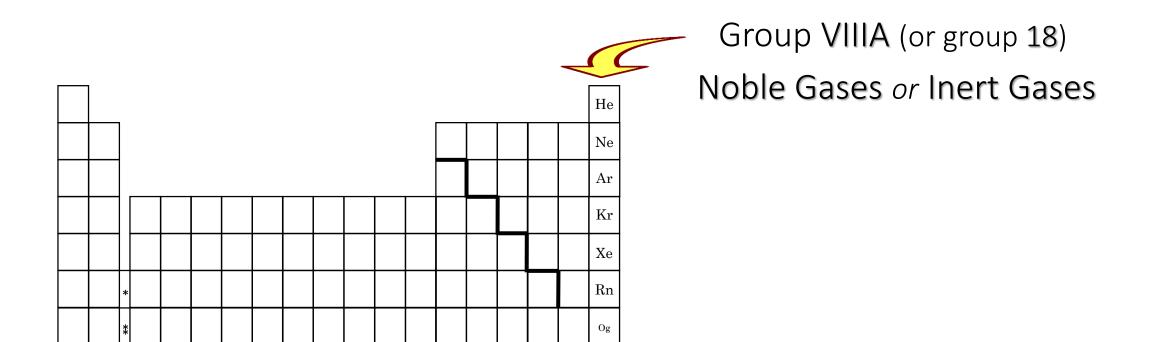
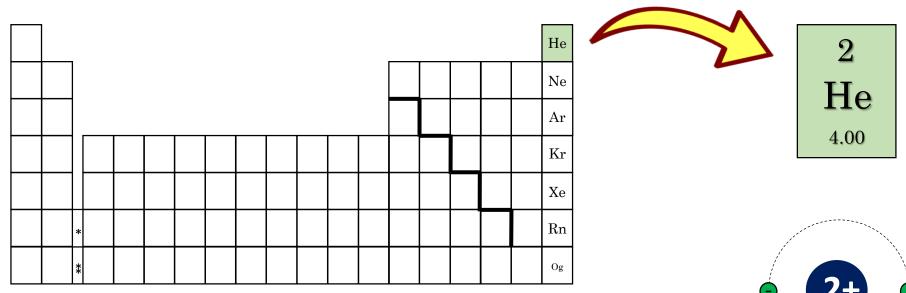
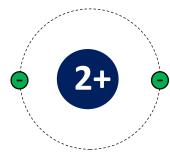
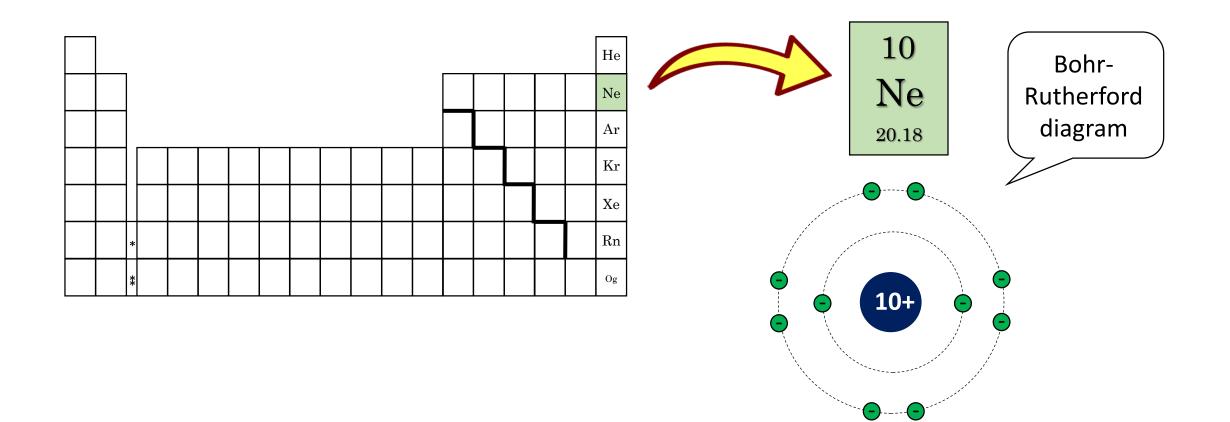
Octet Rule

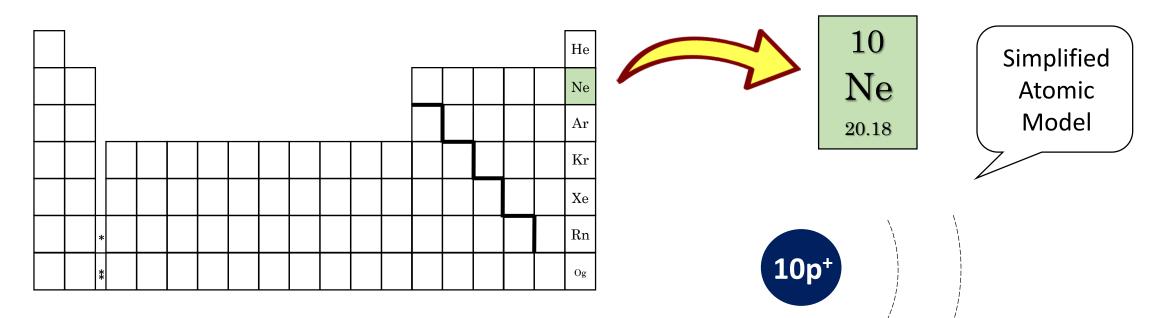






The outer electron shell (*in fact, the only shell*) of a helium atom is **full**, with **2** electrons.

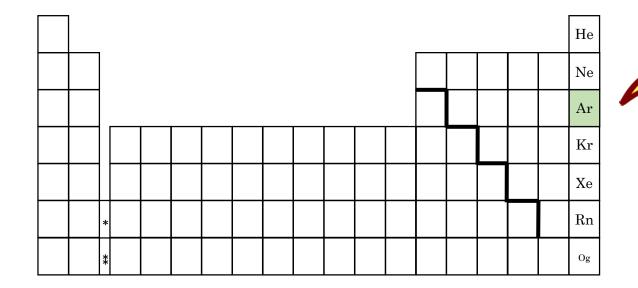




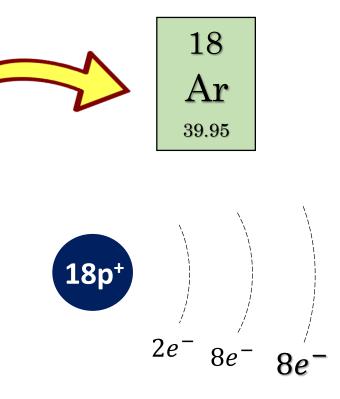
The outer electron shell of a neon atom is full, with 8 electrons.

valence electrons = 8

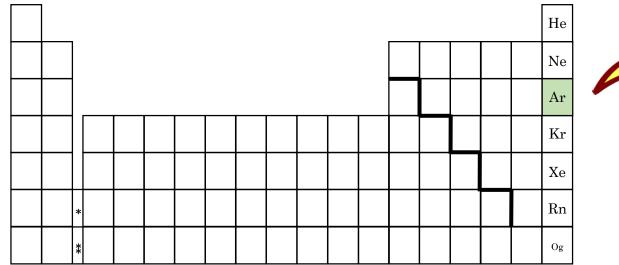
^{2e-} 8e-



The outer electron shell of an argon atom contains **8** electrons.

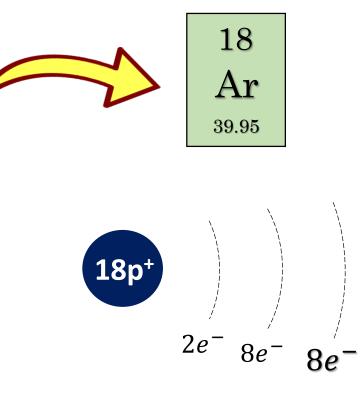


valence electrons = 8

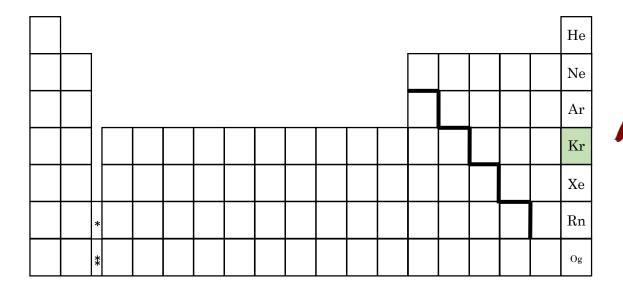


Note: The 3rd shell is not actually full yet, but the next 2 electrons will orbit in the 4th shell.

The maximum number of valence (outer shell) electrons is **8**.

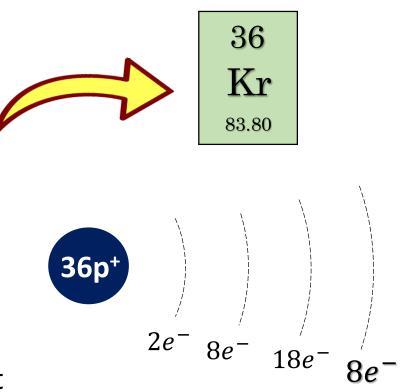


valence electrons = 8

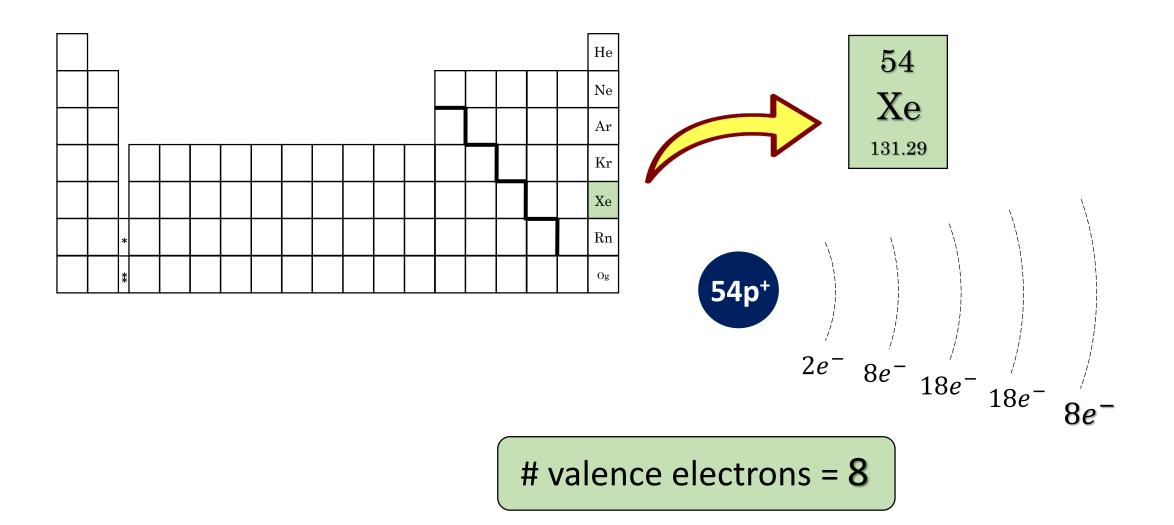


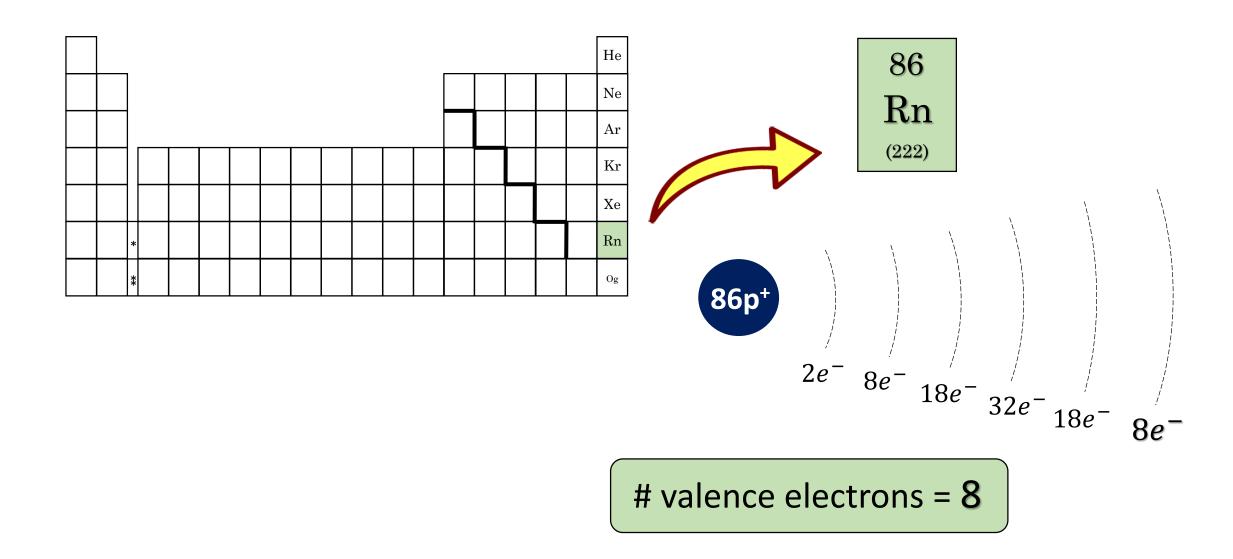
The 3rd shell is now full.

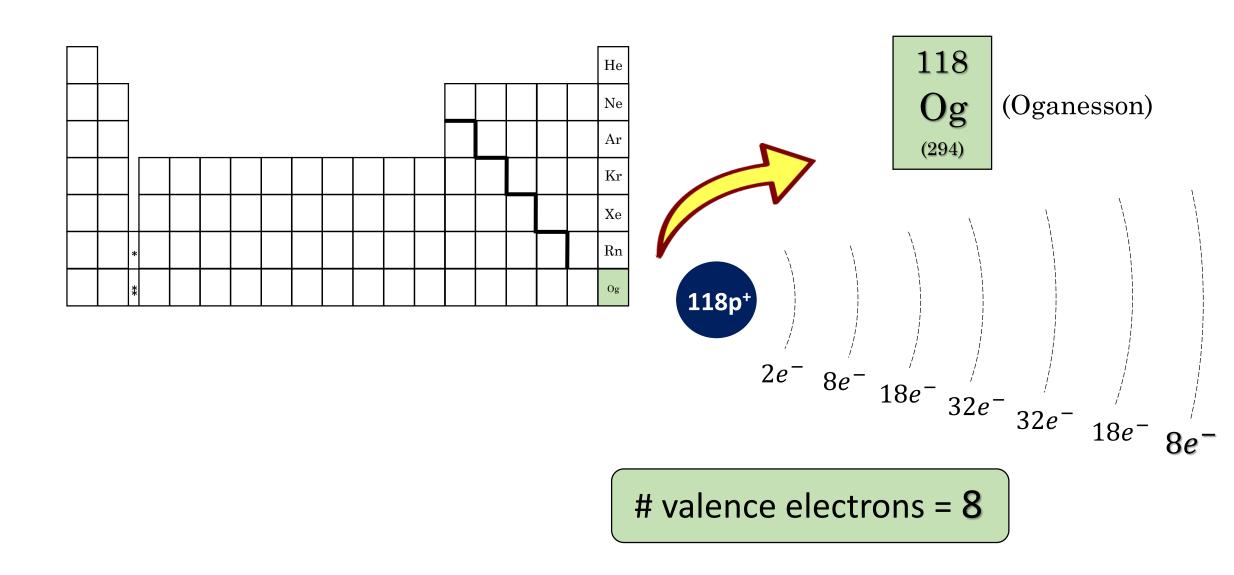
The 4th shell is not actually full yet, but the next 2 electrons will orbit in the 5th shell.

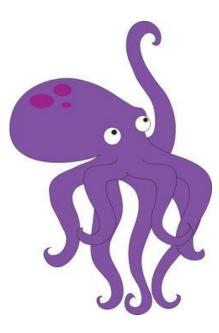


valence electrons = 8











Atoms that contain 8 valence electrons are extremely stable. (Often referred to as having a full outer shell)

<u>Duet Rule:</u>

An atom that has only **2** electrons (Helium) is also extremely stable. (With only 2 electrons, the outer *(only)* shell is full)

Noble (Inert) Gases:

- Elements located in group VIIIA (8A, or 18) of the periodic table.
- > The most stable of all elements.
- Almost never take part in chemical reactions.
- Almost never found in compounds.

