

- 1) A particular neutral atom has the following ground state electron configuration, $[\text{Ar}]4s^2$.
- What element has this electron configuration? _____
 - What group is this element in? _____
 - How many valence electrons does this atom have? _____
 - Would this element **lose or gain** electrons when it reacted with another element and formed an ion?
(*This ion is part of a newly formed stable ionic compound.*) _____
 - Write the **electron configuration** for the ion that is formed. _____
 - Write the **symbol** (with charge) of this ion. _____
 - Is this ion **larger or smaller** than the neutral atom of this element? _____
- 2) A particular neutral atom has the following ground state electron configuration, $[\text{Ar}]4s^23d^{10}4p^5$.
- What element has this electron configuration? _____
 - What group is this element in? _____
 - How many valence electrons does this atom have? _____
 - Would this element **lose or gain** electrons when it reacted with another element and formed an ion?
(*This ion is part of a newly formed stable ionic compound.*) _____
 - Write the **electron configuration** for the ion that is formed. _____
 - Write the **symbol** (with charge) of this ion. _____
 - Is this ion **larger or smaller** than the neutral atom of this element? _____
- 3) A particular neutral atom has the following ground state electron configuration, $[\text{Ne}]3s^23p^1$.
- What element has this electron configuration? _____
 - What group is this element in? _____
 - How many valence electrons does this atom have? _____
 - How many electrons are in this atom's second main energy level ($n=2$)? _____
 - Would this element **lose or gain** electrons when it reacted with another element and formed an ion?
(*This ion is part of a newly formed stable ionic compound.*) _____
 - Write the **electron configuration** for the ion that is formed. _____
 - Write the **symbol** (with charge) of this ion. _____
 - Is this ion **larger or smaller** than the neutral atom of this element? _____
- 4) A particular neutral atom has the following ground state electron configuration, $[\text{Ne}]3s^23p^4$.
- What element has this electron configuration? _____
 - How many protons are in the nucleus of this atom? _____
 - What group is this element in? _____
 - How many valence electrons does this atom have? _____
 - How many unpaired electrons does this atom have? _____
 - Would this element **lose or gain** electrons when it reacted with another element and formed an ion?
(*This ion is part of a newly formed stable ionic compound.*) _____
 - Write the **electron configuration** for the ion that is formed. _____
 - Write the **symbol** (with charge) of this ion. _____
 - Is this ion **larger or smaller** than the neutral atom of this element? _____

- 5) A particular neutral atom has the following ground state electron configuration, $[\text{Ar}]4s^23d^2$.
- What element has this electron configuration? _____
 - How many protons are in the nucleus of this atom? _____
 - What group is this element in? _____
 - Which electrons would be lost first in the formation of an ion
 - Write the **electron configuration** for the ion that is formed when this atom loses these electrons. _____
 - Write the **symbol** (with charge) of this ion. _____
 - Write the **electron configuration** for the ion that is formed when this atom loses all of its outer electrons. _____
 - Write the **symbol** (with charge) of this ion. _____
- 6) A particular neutral atom has the following ground state electron configuration, $[\text{Kr}]5s^24d^7$.
- What element has this electron configuration? _____
 - What group is this element in? _____
 - How many protons are in the nucleus of this atom? _____
 - Which electrons would be lost first in the formation of an ion
 - Write the **electron configuration** for the ion that is formed when this atom loses these electrons. _____
 - Write the **symbol** (with charge) of this ion. _____
 - How many unpaired electrons does this ion contain? _____
 - Write the **electron configuration** for the ion that is formed when this atom forms a 4+ ion. _____
 - Write the **symbol** (with charge) of this ion. _____
 - How many unpaired electrons does this ion contain? _____