**How to rank elements by their periodic trends:**

Sometimes, you may be required to rank elements by one of the periodic trends. For example, you may get a question along the lines of “Rank these elements by increasing electronegativity: K, Cs, Br, Se.” How do you solve something like this?

The first thing you need to do is to take a look at what the periodic trends are. After all, if you don’t know what the trends are, you won’t have any idea how to rank elements in terms of increasing or decreasing anything.

Here are the trends:

Atomic radius is highest on the bottom left of the table and lowest on the top right.

Electronegativity is highest on the upper right of the table and lowest on the bottom left (the exception is the noble gases, which are not electronegative at all).

Ionization energy is highest on the upper right of the table and lowest on the bottom left.

Or, if we were to put this in a beautiful diagram that I drew myself:

Chart

Description automatically generated with low confidence

[*https://www.webelements.com/nexus/printable-periodic-table/*](https://www.webelements.com/nexus/printable-periodic-table/)

*Copyright information:* [*https://www.webelements.com/nexus/webelements-and-copyright/*](https://www.webelements.com/nexus/webelements-and-copyright/)

*Website link:* [*www.webelements.com*](http://www.webelements.com/)

From this table, you should be able to solve any problems of this time that you’d like.

Let’s take the example from earlier:

Rank these elements by increasing electronegativity: K, Cs, Br, Se

If you look at the table above, electronegativity increases as you move left to right on the periodic table and decreases as you move down a group. Let’s mark on a periodic table where these elements are.

A picture containing chart

Description automatically generated

*Image credit same as above.*

If the electronegativity is lowest in the bottom left and highest in the top right, then we can determine the following:

1. Within a group, elements lower down will be less electronegative than those higher up.
2. Within a period, elements on the right will be more electronegative than those on the left.

Using these critera, we can determine that Cs is the least electronegative, followed by K, Se, and Br.

Some more examples:

1. Arrange these elements from smallest to largest: Cs, Fr, I, Po
2. Arrange these elements from lower ionization energy to higher ionization energy: Li, O, S, Ba
3. Arrange these elements from highest electronegativity to lowest electronegativity: C, Sr, F, Ne

Answers:

1. I < Po < Cs < Fr
2. Ba < Li < S < O
3. F > C > Sr > Ne