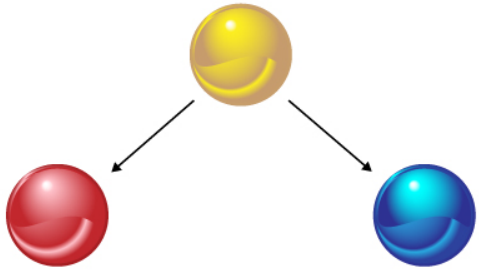
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QUESTION 2

Drag and drop the best terms to complete the sentence.

When a neutral atom loses electrons, it forms a positive ion; when it gains electrons, it forms a negative ion.



QUESTION 4

Fill in the blanks with the correct terms from the Word Bank.

Word Bank		
increases	decreases	stays the same

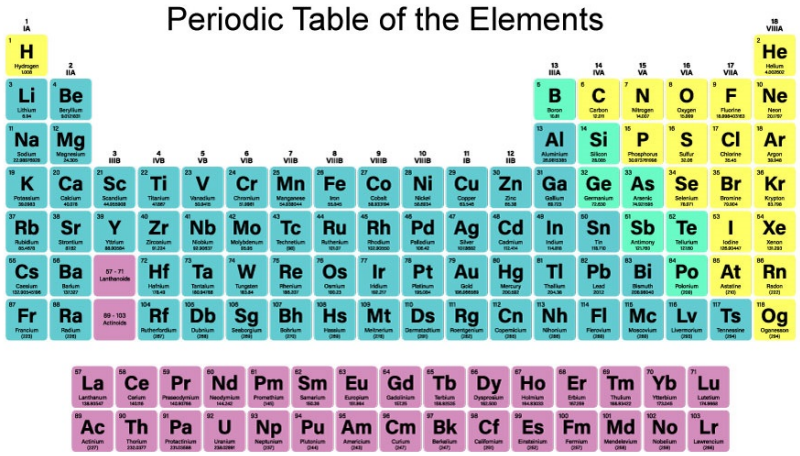
The ionic radii of positive ions decreases from left to right across the period, and it increases as you move down a group.

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QUESTION 5

Select the best answer from the drop-down menu to complete the sentence.

As you move down a group on the periodic table, the ionic radii of



neither positive nor negative ✓ ions decrease.

QUESTION 7

Select the best answer from the drop-down menu to complete the sentence.

Since electrons are negative particles, they repel ✓ each other.

QUESTION 9

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Select the best answer from the drop-down menu to complete the sentence.

Ions are formed when the number of valence ✓ electrons in an atom changes.

QUESTION 11

Select the best answer from the drop-down menu to complete the sentence.

Electrons pull closer to the nucleus in a positive ion because there are more protons than the negatively charged ✓ electrons.

QUESTION 13

Select the best answer from the drop-down menu to complete the sentence.

When an ion gains or loses electrons, the size of its radius ✓ is affected.

QUESTION 15

Select the best answer from the drop-down menu to complete the sentence.

A positive ion (A) has an ionic radius of 0.167 nanometers. Another positive ion (B) has an ionic radius of only 0.138 nanometers. If both of these ions belong to elements that are alkali metals, it can be assumed that the first ion (A) has

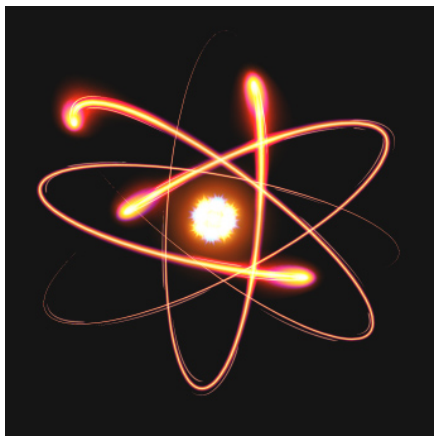
a higher atomic number ✓ .

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QUESTION 17

Select the best answer.

What happens when a neutral atom loses one or more electrons?



- (●) The atom becomes a positive ion with a smaller radius. ✓
- ( ) The atom becomes a negative ion with a smaller radius.
- ( ) The atom becomes a positive ion with a larger radius.
- ( ) The atom becomes a negative ion with a larger radius.

QUESTION 19

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Select the best answer.

The electron configuration for a neutral atom of chlorine is: $1s^2 2s^2 2p^6 3s^2 3p^5$

Which of these represents a chloride ion?

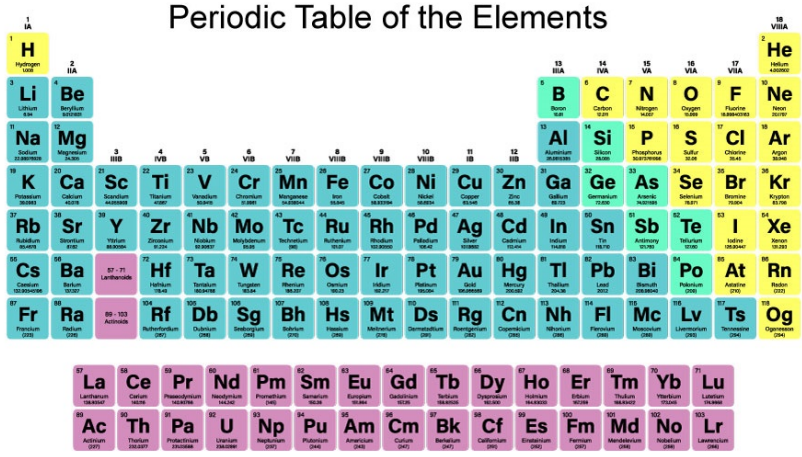


- [x] $1s^2 2s^2 2p^6 3s^2 3p^6$
- [ ] $1s^2 2s^2 2p^6 3s^2 3p^4$
- [ ] $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$
- [ ] $1s^2 2s^2 2p^6 3s^2$

QUESTION 21

Select the best answer.

Identify the group of element on the periodic table that would **most likely** form ions that are large and negatively charged?



- [x] group 17
- [ ] group 1

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group 1

group 5

group 12

QUESTION 23

Select the best answer.

How does the number of electrons affect an ion's radius?

When an atom loses electrons, the remaining electrons are pushed further away from the nucleus.

When an atom loses electrons, the space that exists around the nucleus is larger.

When an atom loses electrons, the space that exists around the nucleus is smaller.

When an atom loses electrons, the remaining electrons are pulled closer to the nucleus. ✓

QUESTION 25

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Select the best answer.

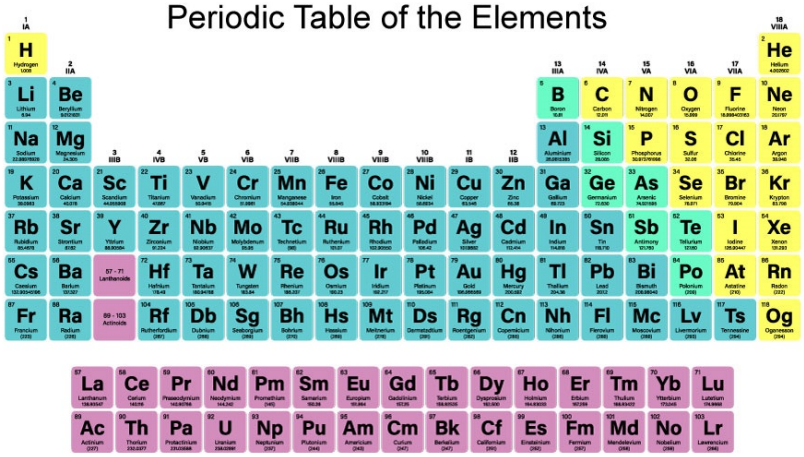
The electron configuration for a neutral atom of potassium is $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$. Which of these represents the ion that potassium forms?

- $1s^2 2s^2 2p^6 3s^2 3p^7$
- $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$
- $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$
- ◉ $1s^2 2s^2 2p^6 3s^2 3p^6$ ✓

QUESTION 27

Select the best answer.

Nonmetals are found on the right side of the periodic table. What can you infer about nonmetal ions?



- Nonmetals ions have smaller radii than their atoms.
- ◉ Nonmetals ions have larger radii than their atoms. ✓
- Nonmetals will lose more electrons than metals will to form ions.

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Nonmetal ions are not easily formed.

QUESTION 29

Select the best answer.

Which of these particles are closest in size in terms of radius?

Na^+ and Cl^-

Na and Na^+

Cl and Cl^-

Na and Cl^- ✓

QUESTION 31

Select the best answer.

What trend can be observed in the relationship between the atomic number, atomic mass, and ionic radii?

Ionic radii increase with atomic mass, but not with atomic number.

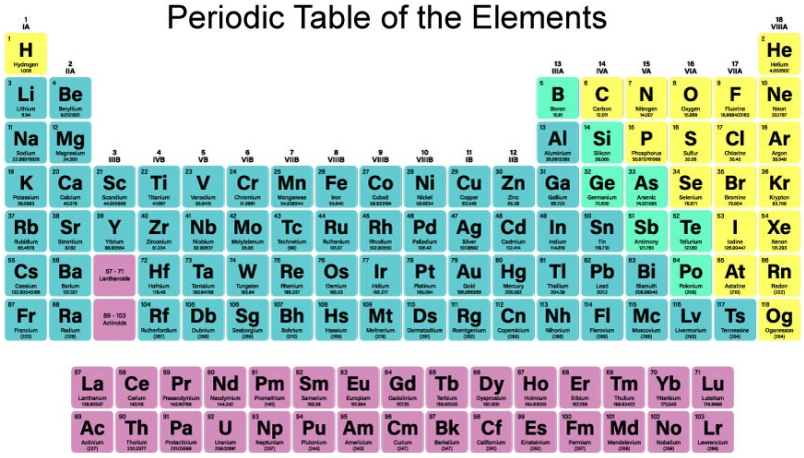
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- [x] There is no direct relationship between ionic radius and atomic number and mass.
- [ ] The higher the atomic number, the smaller the ionic radius.
- [ ] The higher the atomic number, the larger the ionic radius.

QUESTION 33

Select the best answer.

Which element below could be expected to have positive ions with the largest ionic radii?



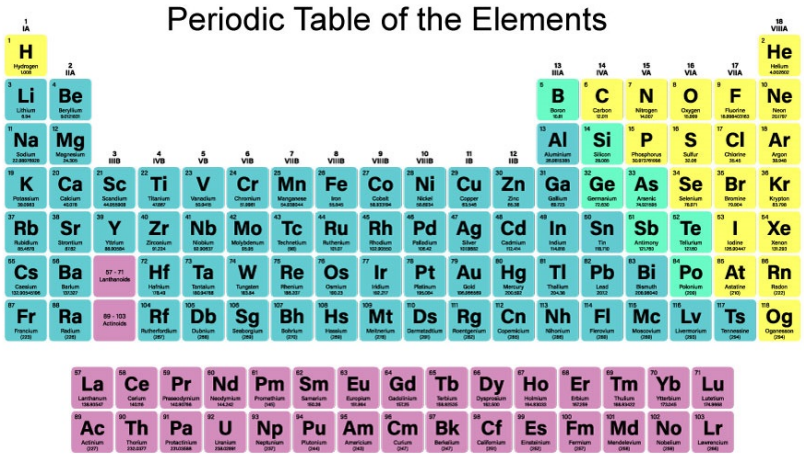
- [x] cesium (Cs)
- [ ] radon (Rn)
- [ ] magnesium (Mg)
- [ ] fluorine (F)

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QUESTION 35

Select the best answer.

Which of these ions has the largest ionic radius?



- Mg^{2+}
- ✓ O^{2-}
- Al^{3+}
- F^{-}

QUESTION 37

Select the best answer.

The sodium and nitrogen ions Na^{+} and N^{3-} each have 10 electrons. However, one has a larger ionic radius than the other. Which has the larger radius and why?

- The sodium ion is bigger because its element is further down in its group on the periodic table.

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The nitrogen ion is bigger because its element is further to the right on the periodic table.

The nitrogen ion is bigger because its electrons do not pull towards the ion's nucleus. ✓

The sodium ion is bigger because its electrons pull closer towards the ion's nucleus.