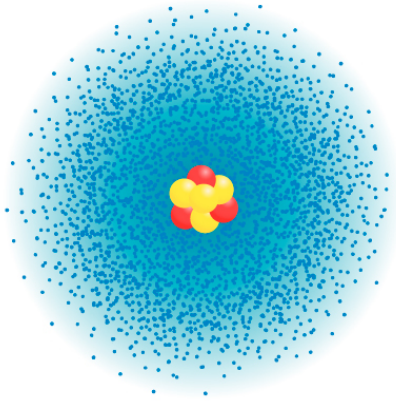
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View hints View feedback Play All

QUESTION 1

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

If you are looking for one specific electron, you will have a 90 ✓ percent chance of finding it in an area within the atom's electron cloud.



QUESTION 3

Drag and drop the best answers to complete the sentence.

In higher principal energy levels, valence ✓ electrons are shielded and are held less tightly to the nucleus of the atom.

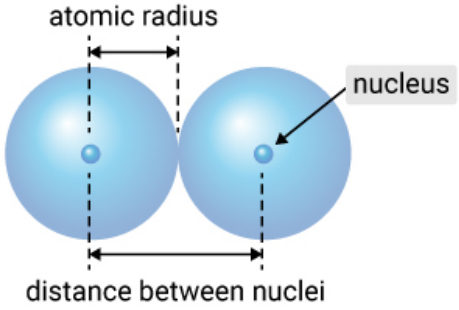
middle inner principal

QUESTION 5

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

The atomic radius ✓ is a measure of the size of an atom. The atomic radius is the average distance between the center of the nucleus to the outer edge of the orbital containing the valence electrons.



QUESTION 7

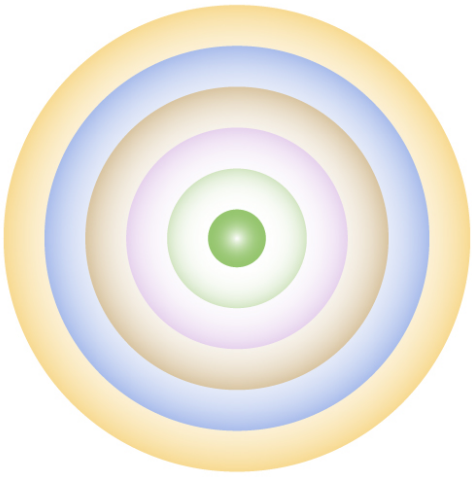
Select the best answer from the drop-down menu to complete the sentence.

The size of an atom largely depends upon its electron configuration ✓.

QUESTION 9

Select the best answer.

Which statement is true about electrons that are in an atom's highest energy levels?



- ○ Electrons in the highest principal energy level have the lowest energy.

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- ○ Electrons in the highest principal energy level are closest to the atom's nucleus.
- ○ Electrons in the highest principal energy level are referred to as the inner electrons.
- ◉ Electrons in the highest principal energy level are furthest from the atom's nucleus. ✓

QUESTION 11

Select the best answers.

Which factors influence the size of an atom?

- ☐ The distribution of electrons in an atom.
- ☑ The types of chemical bonds that form between atoms. ✓
- ☐ The number of valence electrons the atom has.
- ☐ The number of electrons in the innermost principal energy level.
- ☐ The number of elements in the same period.
- ☑ How close the atom is to a neighboring atom. ✓

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QUESTION 13

Choose the best answer.

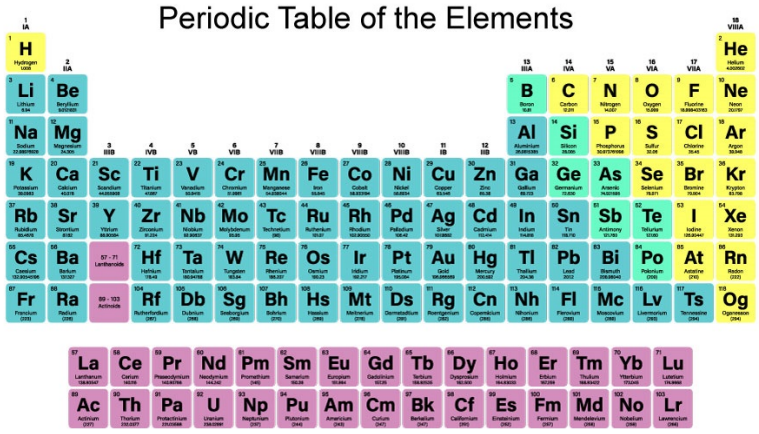
Which statement best describes the relationship between principal energy levels and atomic radius?

- (●) The more principal energy levels an atom has, the bigger its atomic radius. ✓
- ( ) The fewer principal energy levels an atom has, the bigger its atomic radius.
- ( ) There is no relationship between principal energy levels and atomic radius.
- ( ) The more principal energy levels an atom has, the smaller its atomic radius.

QUESTION 15

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

Generally speaking, atoms of elements found towards the [bottom ✓] of the periodic table have the largest atomic radii.



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QUESTION 17

Select the best answer.

Which element's atoms are **most likely** to touch each other without overlapping?

- carbon
- hydrogen
- radon
- iron ✓

QUESTION 19

Select the best answer.

What trend can be observed in the atoms of elements from left to right across a period in the periodic table?

- More electrons are added to higher principal energy levels.
- Additional inner electrons added tend to shield outer electrons.
- The positive charge on the nucleus decreases.

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- [x] The outer valence electrons are pulled closer to the nucleus.

QUESTION 21

Select the best answer.

What trend can be observed in the atoms of elements as one moves down a group in the periodic table?

- [ ] The positive charge on the nucleus decreases.
- [ ] There are fewer inner electrons to shield the outer valence electrons.
- [ ] More electrons are added to the same principal energy level.
- [x] The outer valence electrons are farther away from the nucleus.

QUESTION 23

Select the best answer.

An iron atom and a krypton atom each have four principal energy levels. Which of these atoms has the larger atomic radius?

- [ ] The krypton atom, because noble gases have the widest electron clouds in a period.

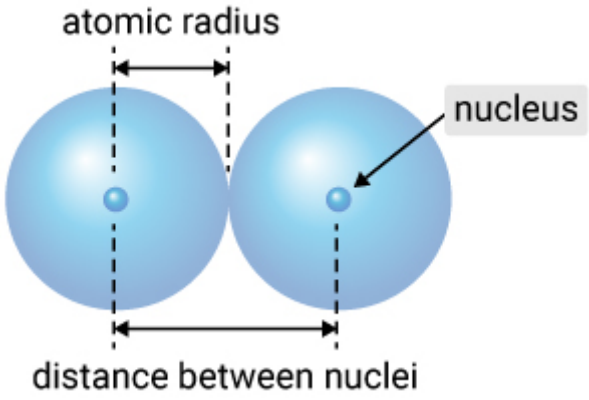
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- [x] The iron atom, because it has a lower electrostatic attractive force between the nucleus and outer electrons than krypton. ✓
- [ ] The iron atom, because metal atoms have larger nuclei than nonmetals.
- [ ] The krypton atom, because it occurs as a diatomic molecule.

QUESTION 25

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

These two atoms are most likely from elements in the metal ✓ group.



QUESTION 27

Select the best answer.

Which of these electron configurations belongs to the atom with the largest atomic radius?

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

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$1s^2 2s^2 2p^4$

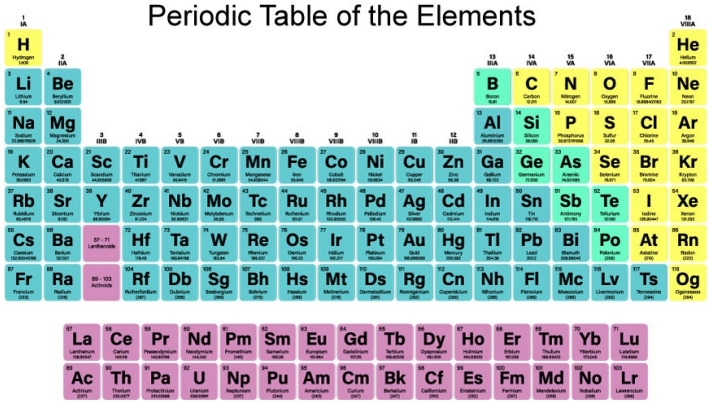
$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$ ✓

QUESTION 29

Select the best answer.

The electron configuration of sodium (Na), found in period 3, is: $1s^2 2s^2 2p^6 3s^1$

Chlorine (Cl), also found in period 3, has the configuration: $1s^2 2s^2 2p^6 3s^2 3p^5$



Which of these configurations belongs to the period 3 element silicon (Si)?

$1s^2 2s^2 2p^6 3s^2 3p^2$ ✓

$1s^2 2s^2 2p^6$

$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^2$

$1s^2 2s^2 2p^3$

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QUESTION 31

Select the best answer.

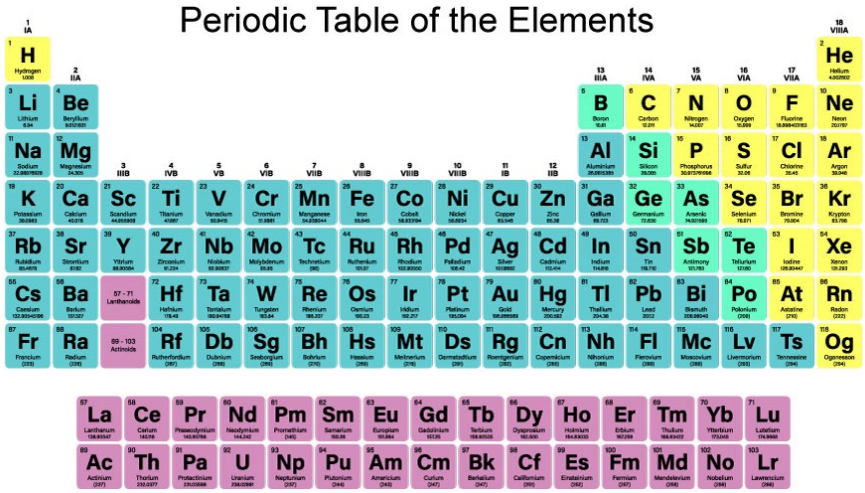
Fluorine, bromine and iodine are all elements in group 17.

The electron configuration of fluorine is

$1s^2 2s^2 2p^5$

The electron configuration of bromine is

$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^5$



Which of these configurations belongs to iodine?

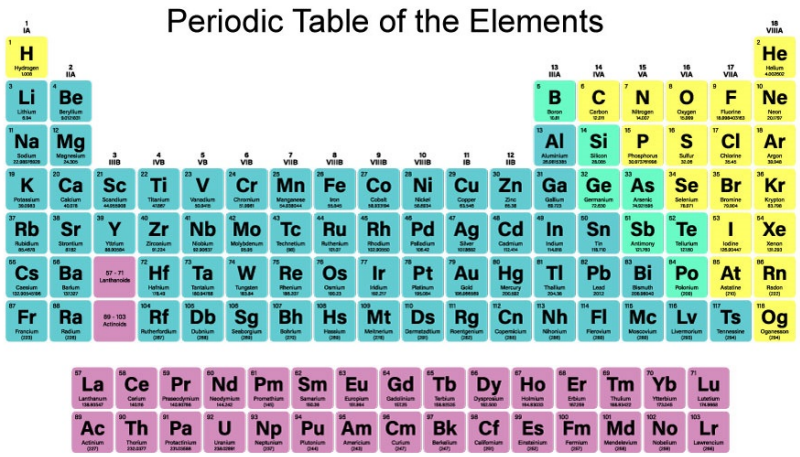
- ◉ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^5$ ✓
- ○ $1s^2 2s^2 2p^6 3s^2 3p^5$
- ○ $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^1$
- ○ $1s^2 2s^2 2p^5 3s^2 3p^6 4s^2 3d^5$

QUESTION 33

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Select the best answer.

Which of these elements on the periodic table has the smallest atomic radius?
neon (Ne), sodium (Na), calcium (Ca), iron (Fe)

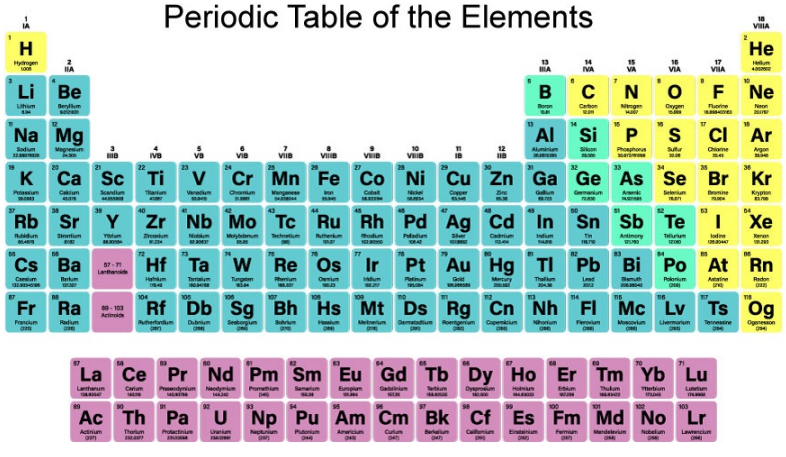


- [x] neon
- [ ] sodium
- [ ] iron
- [ ] calcium

QUESTION 35

Select the best answer.

Calcium is located towards the left side of period 4, while bromine is located towards the right side of that same period. From this information, what can you determine about bromine when compared to calcium?



- [ ] The nuclei of bromine atoms have a lower positive charge than calcium

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nuclei.

- [x] The valence electrons in bromine are pulled closer to the nucleus than the valence electrons in calcium.

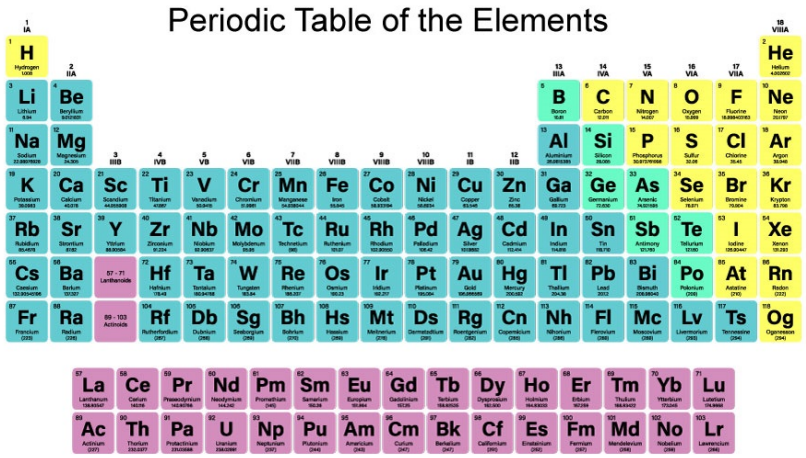
- [ ] Bromine atoms have additional electrons in their inner principal energy levels.

- [ ] Bromine has fewer electrons in its outer principal energy levels than calcium.

QUESTION 37

Select the best answer.

Which element on the periodic table has the largest atomic radius?



- [ ] radon (Rn)

- [x] francium (Fr)

- [ ] hydrogen (H)

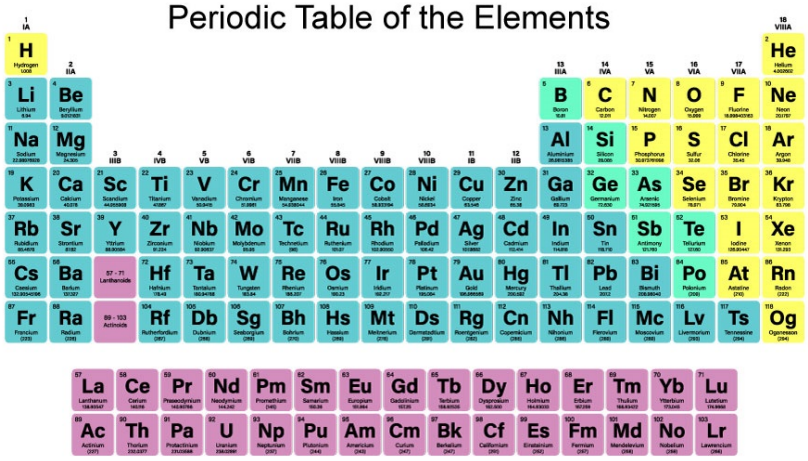
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helium (He)

QUESTION 39

Select the best answer.

Beryllium is located at the top of group 2 on the periodic table, while radium is located at the bottom. From this information, what can you determine about radium when compared to beryllium?



Radium's nucleus is smaller and has more compressed particles than beryllium's nucleus.

Radium has fewer inner electrons than beryllium.

Radium has fewer electrons in its outer principal energy levels than beryllium.

In radium, the nucleus has a greater positive charge than in beryllium.