

Name : _____ Date : _____

Periodic Table Trends



Use the periodic table and your knowledge of the periodic trends to answer the following questions.

1. Atomic Radius

For each of the following sets of atoms, rank them from smallest to largest atomic radius.

- a) Li, C, F, Ne
- b) Li, Na, K, Ca
- c) Ge, P, O, N
- d) C, N, Al, Br
- e) Al, Cl, Ge, Si
- f) Sn, Ge, Pb, Si

2. Ionization Energy

For each of the following sets of atoms, rank them from lowest to highest ionization energy.

- a) As, Sb, Bi, P
- b) P, Ar, Si, Al
- c) Ca, Na, Ba, Rb
- d) Cs, Sr, Mg, K
- e) Sb, Al, Po, Ge

3. Electronegativity

For each of the following sets of atoms, rank them from lowest to highest electronegativity.

- a) N, F, O, C
- b) P, Cl, Si, S
- c) Br, F, I, Cl
- d) Ti, Ca, Sc, K
- e) P, K, Mg, Se
- f) Be, S, Sr, O

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Periodic Table Trends



Answers

1. Atomic Radius

For each of the following sets of atoms, rank them from smallest to largest atomic radius.

- a) Li, C, F, Ne $\text{Ne} < \text{F} < \text{C} < \text{Li}$
- b) Li, Na, K, Ca $\text{Li} < \text{Na} < \text{Ca} < \text{K}$
- c) Ge, P, O, N $\text{O} < \text{N} < \text{P} < \text{Ge}$
- d) C, N, Al, Br $\text{N} < \text{C} < \text{Al} < \text{Br}$
- e) Al, Cl, Ge, Si $\text{Cl} < \text{Si} < \text{Al} < \text{Ge}$
- f) Sn, Ge, Pb, Si $\text{Si} < \text{Sb} < \text{Sn} < \text{Pb}$

2. Ionization Energy

For each of the following sets of atoms, rank them from lowest to highest ionization energy.

- a) As, Sb, Bi, P $\text{Bi} < \text{Sb} < \text{As} < \text{P}$
- b) P, Ar, Si, Al $\text{Al} < \text{Si} < \text{P} < \text{Ar}$
- c) Ca, Na, Ba, Rb $\text{Rb} < \text{Na} < \text{Ba} < \text{Ca}$
- d) Cs, Sr, Mg, K $\text{Cs} < \text{K} < \text{Sr} < \text{Mg}$
- e) Sb, Al, Po, Ge $\text{Al} < \text{Ge} < \text{Po} < \text{Sb}$

3. Electronegativity

For each of the following sets of atoms, rank them from lowest to highest electronegativity.

- a) N, F, O, C $\text{C} < \text{N} < \text{O} < \text{F}$
- b) P, Cl, Si, S $\text{Si} < \text{P} < \text{S} < \text{Cl}$
- c) Br, F, I, Cl $\text{I} < \text{Br} < \text{Cl} < \text{F}$
- d) Ti, Ca, Sc, K $\text{K} < \text{Ca} < \text{Sc} < \text{Ti}$
- e) P, K, Mg, Se $\text{K} < \text{Mg} < \text{P} < \text{Se}$
- f) Be, S, Sr, O $\text{Sr} < \text{Be} < \text{S} < \text{O}$