Graphing Periodic Trends Worksheet

1. Using the ionization energy (IE) values of the elements in Period 2 listed below, make a line graph of IE vs. the atomic number.

Period 2		
Element	**Atomic Number**	**IE (kJ/mol)**
Li	3	519
Be	4	900
B	5	799
C	6	1088

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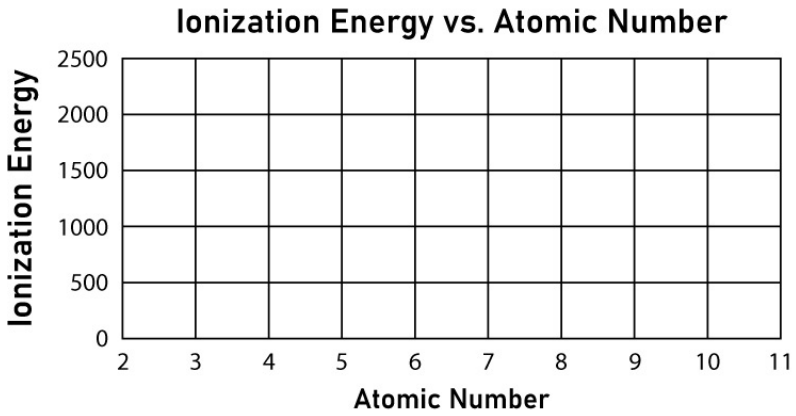
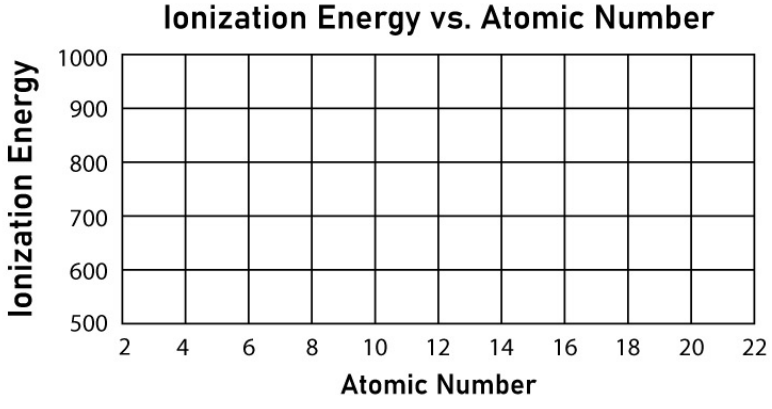


a) What trend do you notice for the ionization energies in Period 2?

b) Explain why you observe this trend.

2. Make a scatter plot of ionization energy vs. atomic number for the first three atoms in Group 2A listed below.

Group 2A		
Element	**Atomic Number**	**IE (kJ/mol)**
Be	4	900
Mg	12	736
Ca	20	590



Graphing Periodic Trends Worksheet

Answers

1. Using the ionization energy (IE) values of the elements in Period 2 listed below, make a line graph of IE vs. the atomic number.

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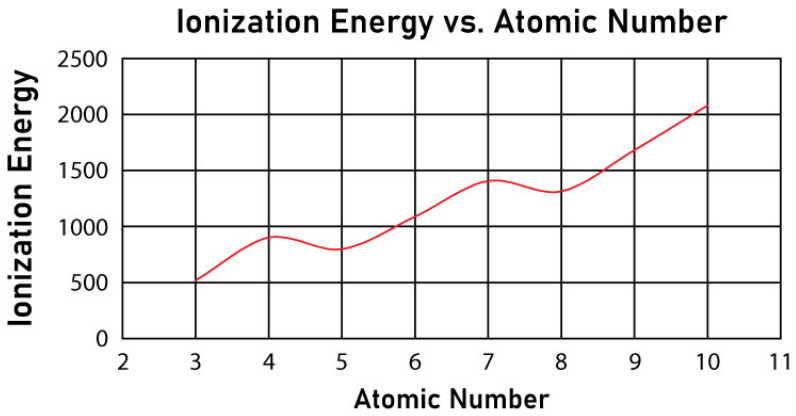

a) What trend do you notice for the ionization energies in Period 2?

It increases with the atomic number.

b) Explain why you observe this trend.

As the atomic number increases, protons are added to the nucleus. The valence electrons are held tightly. Hence, more energy is required to remove an electron.

2. Make a scatter plot of ionization energy vs. atomic number for the first three atoms in Group 2A listed below.

Group 2A		
Element	**Atomic Number**	**IE (kJ/mol)**
Be	4	900
Mg	12	736
Ca	20	590