

## binary ionic compounds (Homework)

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Chemistry\_Questions\_0127

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1.

A simple ion with a +1 charge (for example,  $\text{Na}^+$ ) results when an atom \_\_\_\_\_ electrons.

2.

Positive ions are called \_\_\_\_\_.

whereas negative ions are called \_\_\_\_\_.

3.

Simple negative ions formed from single atoms are given names that end with the letters \_\_\_\_\_.

4.

How many electrons are contained in each of the following ions?

(a)  $\text{K}^+$       (b)  $\text{Mn}^{2+}$       (c)  $\text{Co}^{3+}$       (d)  $\text{Co}^{2+}$

(e)  $\text{Cr}^{3+}$       (f)  $\text{I}^-$       (g)  $\text{Fe}^{3+}$       (h)  $\text{P}^{3-}$

5.

For the following pairs of ions, use the concept that a chemical compound must have a net charge of zero to predict the formula of the simplest compound that the ions are most likely to form. (Type your answer using the format  $\text{CO}_2$  for  $\text{CO}_2$ .)

(a)  $\text{Na}^+$  and  $\text{C}^{4-}$       (b)  $\text{Sn}^{4+}$  and  $\text{N}^{3-}$       (c)  $\text{Fe}^{3+}$  and  $\text{P}^{3-}$       (d)  $\text{Sn}^{4+}$  and  $\text{C}^{4-}$

(e)  $\text{Mg}^{2+}$  and  $\text{N}^{3-}$       (f)  $\text{Mg}^{2+}$  and  $\text{C}^{4-}$       (g)  $\text{Fe}^{3+}$  and  $\text{C}^{4-}$       (h)  $\text{Fe}^{3+}$  and  $\text{S}^{2-}$

6.

Write the correct formula for the ionic compound composed of potassium and iodide. (Type your answer using the format  $\text{CH}_4$  for  $\text{CH}_4$ .)

7.

Write the correct formula for the ionic compound composed of magnesium and chloride. (Type your answer using the format CH<sub>4</sub> for CH<sub>4</sub>.)

8.

Give the number of valence electrons in an atom of each of the following.

- (a) cesium
- (b) zinc
- (c) strontium
- (d) gallium
- (e) rubidium

9.

Predict the reactivity of the following atoms based on their electron configurations.

- (a) potassium
- (b) fluorine

(c) neon

10.

Which of the following compounds are not likely to occur?

Explain your choices.

11.

Give the number of valence electrons for each of the following atoms.

- (a) bromine
- (b) arsenic
- (c) sulfur
- (d) phosphorus
- (e) oxygen

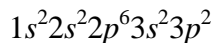
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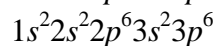
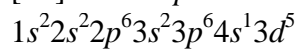
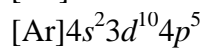
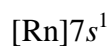
Give the name of each of the following simple binary ionic compounds.

- (a) NaI
- (b) CaF<sub>2</sub>
- (c) Al<sub>2</sub>S<sub>3</sub>
- (d) CaBr<sub>2</sub>
- (e) SrO
- (f) AgCl
- (g) CsI
- (h) Li<sub>2</sub>O

13.

Enter the symbol for the element represented by each of the following ground state configurations for the neutral atom.





14.

How many unpaired electrons are present in each of the following ions? Enter your answers as numerals.



15.

What is the formula for lithium oxide?

16.

What is the formula for aluminum bromide?

17.

What is the formula for strontium chloride?

18.

What is the formula for magnesium fluoride?

19.

How many neutrons are found in the isotope oxygen-18?  
neutrons