Worksheet #5

Rocio, all matter is composed of **atoms**.

Atoms are composed of **positive** protons and **negative** electrons.

1 **Protons** are found in an atom's nucleus and have a charge of **+1**.

2 **Electrons** surround an atom and have a charge of **-1**.

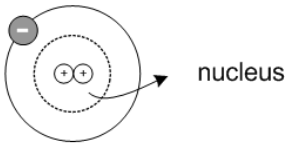
In this worksheet we will use these symbols:

Proton Charge = +1

Electron Charge = -1

Atoms that have **more electrons than protons** or have **more protons than electrons** are called **ions**.

Here is a picture of a helium ion:



Helium Ion

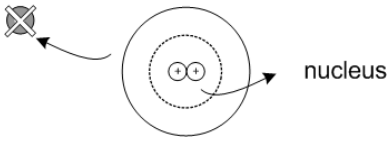
Net Charge = +2 + -1 = +1

It has 2 protons and 1 electron so it's net charge is:

+2 + -1 = +1 = 1

Let's take a sample question.

*The hydrogen ion above **loses** 1 electron. What is the net charge now?*

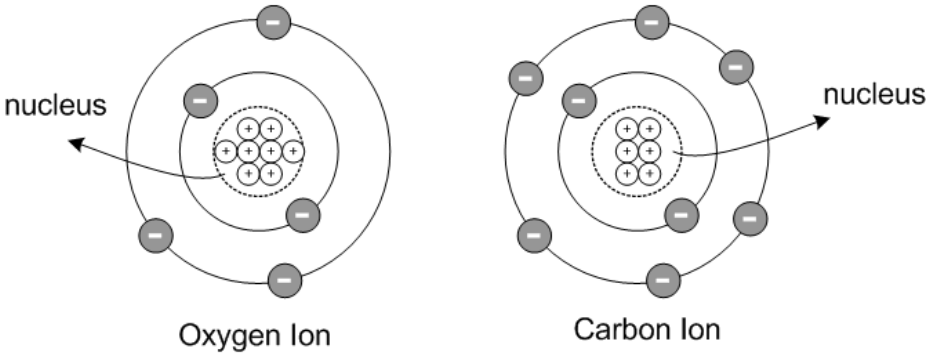


We solve this by saying:

+1 - -1 = +1 + 1 = +2 = 2

So now the net charge is +2 or just 2.

Here's a diagram of an oxygen ion and a carbon ion:



Net Charge =

Net Charge =

Q1 Write an equation for the net charge of the oxygen atom and solve:

Q2 Write an equation for the net charge of the carbon atom and solve:

Q3 What is the total charge of the two atoms combined:

Q4 How much more charge does the oxygen atom have than the carbon atom:

Q5 How much more charge does the carbon atom have than the oxygen atom:

Q6 If the oxygen atom **gains** one electron what is its net charge now:

Q7 If the oxygen atom **loses** four electrons what is its net charge now:

Q8 If the carbon atom **loses** two electrons what is its net charge now:

Worksheet #5

-- scratch paper --

Worksheet #5: Answer Key

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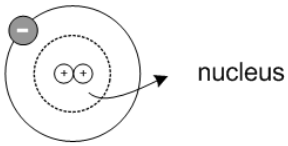

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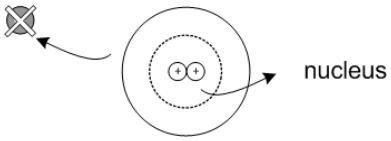

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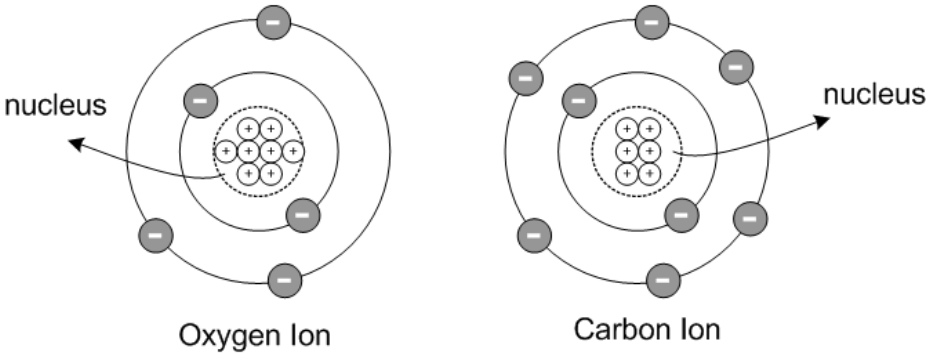

Oxygen Ion

Carbon Ion

Net Charge =

Net Charge =

Q1 Write an equation for the net charge of the oxygen atom and solve:

8 + -5 = 3

Q2 Write an equation for the net charge of the carbon atom and solve:

6 + -8 = -2

Q3 What is the total charge of the two atoms combined:

3 + -2 = 1

Q4 How much more charge does the oxygen atom have than the carbon atom:

3 - -2 = 3 + 2 = 5

Q5 How much more charge does the carbon atom have than the oxygen atom:

-2 - 3 = -5

Q6 If the oxygen atom **gains** one electron what is its net charge now:

3 + -1 = 2

Q7 If the oxygen atom **loses** four electrons what is its net charge now:

3 - -4 = 3 + 4 = 7

Q8 If the carbon atom **loses** two electrons what is its net charge now:

-2 - -2 = 0

Worksheet #5: Answer Key

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