

# IONS AND ISOTOPES WORKSHEET

1. Differentiate between ions and isotopes in the form of a table.

Ions	Isotopes

2. Complete the table with the appropriate information.

Symbol of the Element	Atomic Number	Mass Number	Number of Protons	Number of Electrons	Number of Neutrons
	17				19
		180		71	109
Zr			40	38	46
U	92	238		86	

# IONS AND ISOTOPES WORKSHEET

1.

## Answers

Ions	Isotopes
Ions are atoms (or molecules) which have lost or gained electrons and as a result have an electrical charge	Isotopes are versions of a particular element that have different numbers of neutrons
These particles carry a charge, be it positive or negative	The particles do not carry any charge and are neutral
The mass of the particle varies little as electrons do not add or subtract much from the overall mass	The mass of the particle varies greatly as the neutrons which are added and removed make up a large part of the overall mass
The formation of ions is extremely common and is observed in chemical reactions regularly	The formation of isotopes is rarer, taking place in nuclear reactions whose conditions are considerably harder to achieve due to the energy required

2.

Symbol of the Element	Atomic Number	Mass Number	Number of Protons	Number of Electrons	Number of Neutrons
Cl	17	36	17	17	19
Lu	71	180	71	71	109
Zr	40	86	40	38	46
U	92	238	92	86	146