It All Adds Up

You can use the periodic table to find the number of protons, neutrons, and electrons that the atoms of an element have.

Atomic number = number of protons
Number of protons = number of electrons
Mass number = number of protons + number of neutrons
so
Mass number − atomic number = number of neutrons

All atoms of a particular element have the same number of protons and electrons, but the atoms may differ in the number of neutrons they have. Atoms of the same element with different numbers of neutrons are called **isotopes**. Isotopes have the same atomic number but different atomic masses. In nature, an element is found as a mixture of different isotopes. The atomic masses or weights in the periodic table are the average for an element's isotopes.

Isotopes can be written in two ways:

Carbon−12 or $^{12}_{6}C$

12 is the mass number of carbon.
6 is the atomic number of carbon.
C is the chemical symbol for carbon.

Use the periodic table to fill in information about the isotopes in the chart below.

Substance	Mass Number	Number of		
		Protons	Neutrons	Electrons
1. carbon−14				
2. lead−208				
3. uranium−239				
4. uranium−238				
5. tin−118				