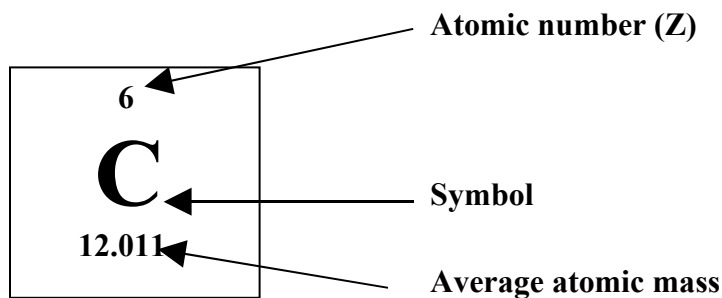


1. The nucleus of the atom contains which two main types of particles?
2. Which sub-atomic particles are found outside the nucleus of the atom?
3. Since the number of positive charges balances the number of negative charges in an atom, it has what overall charge?
4. What is the electrical charge of an electron? What is the symbol for an electron?
5. What is the electrical charge of a proton? What is the symbol for a proton?
6. What is the electrical charge of a neutron? What is the symbol for a neutron?
7. What sub-atomic particle defines the atomic number of an element? The symbol for the atomic number is _____.
8. In an atom, the number of _____ equals the number of _____. Therefore, the atomic number “Z” also tells the number of _____ in an atom.

One of the squares on the periodic table usually looks much like this:



Always look at the Legend on each periodic table to be sure of the information given in the square.

9. The atomic mass number (A) of an element represents the sum of which two sub-atomic particles?
10. Since almost all of the mass in an atom comes from the nucleus, you can determine “A” from the periodic table, simply rounding the _____ to the nearest whole number.

$$A = \#p^+ + \#n^0$$

So... $\#n^0 = A - Z$

$$A = Z + \#n^0$$

11. Determine the Z’s and A’s for each of the following elements by looking on a periodic table.

	Chlorine	Magnesium	Copper	Silver	Silicon	Xenon
A =						
Z =						

	Element	Symbol	Atomic #	Mass #	# Protons	# Neutrons	# Electrons
49							15
50						0	
51	sodium						
52					4		
53				65			
54			35				
55					47		
56	nitrogen						
57						14	
58				207			
59		Cr					
60			18				
61	nickel						
62				96			
63							33
64		Sb					
65						28	
66			48				
67					53		
68				209			
69	rubidium						
70							92
71				39			
72		Ba					
73			13				
74	fluorine						
75					5		
76				35			
77						77	
78		Fe					
79					79		
80							74

Element notation is a symbolic way to write an element's A and Z with the symbol:

The element notation for sulfur looks like this:

The A is to the top left, and the Z is to the bottom left ${}^{32}_{16}\text{S}$

The names of isotopes are written with the A following the name.

Complete the following table:

	Isotope	Atomic #	# Protons	# Electrons	# Neutrons
81	carbon- 12				
82	carbon- 14				
83	oxygen- 16				
84	oxygen- 17				
85	oxygen- 18				
86	antimony- 121				
87	antimony- 123				
88	uranium- 235				
89	uranium- 237				
90	uranium- 238				
91	strontium- 88				
92	strontium- 90				
93	hydrogen- 1				
94	hydrogen- 2				
95	hydrogen-3				
Write the element notation for each of the following:					
96	sulfur	phosphorus	potassium	lithium	radium
97	iodine	cesium	calcium	nitrogen	helium
98	tin	lead	tungsten	yttrium	chlorine