Atoms: The Building Blocks of Matter

SECTION 3

SHORT ANSWER **Answer the following questions in the space provided.**

1. Explain the difference between the *mass number* and the *atomic number* of a nuclide.

2. Why is it necessary to use the average atomic mass of all isotopes, rather than the mass of the most commonly occurring isotope, when referring to the atomic mass of an element?

3. How many particles are in 1 mol of carbon? 1 mol of lithium? 1 mol of eggs? Will 1 mol of each of these substances have the same mass?

4. Explain what happens to each of the following as the atomic masses of the elements in the periodic table increase:

a. the number of protons

b. the number of electrons

c. the number of atoms in 1 mol of each element

5. Use a periodic table to complete the following chart:

Element	Symbol	Atomic number	Mass number
Europium-151			
	$^{109}_{47}Ag$		
Tellurium-128			

6. List the number of protons, neutrons, and electrons found in zinc-66.

_____ protons

_____ neutrons

_____ electrons

PROBLEMS **Write the answer on the line to the left. Show all your work in the space provided.**

7. _____ What is the mass in grams of 2.000 mol of oxygen atoms?

8. _____ How many moles of aluminum exist in 100.0 g of aluminum?

9. _____ How many atoms are in 80.45 g of magnesium?

10. _____ What is the mass in grams of 100 atoms of the carbon-12 isotope?