

**Answers**

1. Match the term on the left with the correct phrase on the right (7 points)

A. Isotope	<u>F</u>	Smallest subatomic particle; negative charge
B. Atomic Number	<u>A</u>	Same atomic number, different mass number
C. Neutron	<u>E</u>	Positive subatomic particle
D. Mass Number	<u>G</u>	Same mass number, different atomic number
E. Proton	<u>C</u>	Largest subatomic particle
F. Electron	<u>B</u>	Number of protons
G. Isobar	<u>D</u>	Number of protons and neutrons

2. Calculate the atomic number and mass number for an atom with 30 protons, 34 neutrons and 28 electrons. What element is it? What is the atom's symbol? Give the symbol for this isotope in the form  ${}^A_ZX$ . (5 points)

**This is zinc-64, or  ${}_{30}^{64}\text{Zn}^{2+}$**

3. Classify each of the statements below as being True (T) or false (F). (1 point each, 8 points total)

An elemental symbol contains a capital letter followed by a small letter	<u>F</u>
The properties of elements are always different from the properties of the compounds they formed	<u>T</u>
Two objects, both having a negative charge, attract each other	<u>F</u>
Two atoms of silicon each with a different number of electrons will always have the same mass number	<u>F</u>
The mass number for each isotope of an element will be different	<u>T</u>
Protons and electrons act like a type of "glue" that holds the atom together	<u>T</u>
Democritus determined that most of the atom was empty	<u>F</u>
An isotope of neptunium with 93 neutrons is written as neptunium-93	<u>F</u>