

Name: _____

Period: _____

Seat#: _____

Complete the following chart and answer the questions below:

- 1) The 3 particles of the atom are: _____
- 2) Their respective charges are: _____
- 3) The number of protons in one atom of an element determines the atom's _____, and the number of electrons determines the _____ of an element.
- 4) The atomic number tells you the number of _____ in one atom of an element. It also tells you the number of _____ in a neutral atom of that element. The atomic number gives the "identity" of an element as well as its location on the Periodic Table. No two different elements will have the same _____ number.
- 5) The _____ of an element is the average mass of an element's naturally occurring atom, or isotopes, taking into account the _____ of each isotope.
- 6) The _____ of an element is the total number of protons and neutrons in the _____ of the atom.
- 7) The mass number is used to calculate the number of _____ in one atom of an element. In order to calculate the number of neutrons you must subtract the _____ from the _____.

Give the symbol and number of protons in one atom of:

8) Lithium	9) Iron	10) Oxygen	11) Krypton
12) Bromine	13) Copper	14) Mercury	15) Helium

Give the symbol and number of electrons in one atom of:

16) Uranium	17) Boron	18) Antimony
19) Chlorine	20) Iodine	21) Xenon

Give the symbol and number of neutrons in one atom of:

22) Barium	23) Bismuth	24) Carbon	25) Mercury
26) Magnesium	27) Hydrogen	28) Fluorine	29) Europium

Dougherty Valley HS Chemistry
Atomic Numbers and Isotopes 2

Name the element which has the following number of particles

30) 26e, 29n, 26p	31) 53p, 74n	32) 2e (neutral atom)
33) 20p	34) 86e, 125n, 82p (charged atom)	35) Zero neutrons

How many protons, electrons, and neutrons does each element or ion have (list in that order). Assume the most abundant isotope (use the rounded mass from the periodic table).

36) Ca ²⁺	37) F ⁻	38) Fe ³⁺
39) O ²⁻	40) N ³⁻	41) Br ⁻

If you know ONLY the following information, can you always determine what the element is? Yes or No?

42) The number of protons	43) The number of neutrons	44) The number of electrons in a neutral atom	45) The number of electrons
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A typical isotopic symbol takes this form:



Example: Fluorine



Key: X = element symbol
 A = mass number [# of protons (p) + # neutrons (n)]
 Z = atomic number [# of protons]
 N = # of neutrons
 A - Z = N

Fill in the missing items in the table below:

	Name	Symbol	#'s		Isotopic Symbol
46)		Na	Z		
			A		
			# p		
			# e		
			# n		
47)			Z		
			A		
			# p	75	
			# e		
			# n		
48)	Potassium		Z		
			A		
			# p		
			# e		
			# n		