

Isotope, Ion or Atom? How can you tell?

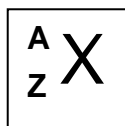
Name: _____ Per: _____ # _____ Date: _____

Fill in the blanks by utilizing the given information.

ELEMENT	SYMBOL	ATOMIC #	MASS #	p [⊕]	n [⊖]	e ⁻	Isotope, ion or atom
Aluminum	Al	13	27	13	14	13	Isotope
Bromine			80			36	1- ion
		92			146	92	
		2	4				1- ion
Helium			5			2	
Tungsten			184		110	74	
	Mg		24				2+ ion
	C		14		8		
	Cu				32		
		7	14			10	
				4			2+ ion
	U		238			90	
Chlorine			35			17	
			39	19			
		6	14				
		10			12		
Potassium			38			18	
Sodium			22			10	
			12		6		
	Ne		22			10	
			19	9		10	
Chromium					22		
		17			20		
	Ca		40			18	
			63	29		29	
	Cd		115			46	
	Cr		54				
Silver					58	46	
			132		77	55	
			63	28		28	
	P		30			15	
				10	11	10	
Selenium					44	36	
			204		122		
	Sr				38	36	
Manganese			50			20	
			40		22		

For the purposes of this exercise, any atom that has a different number of protons and neutrons is to be considered an isotope. Any atom that has a difference in electrons and protons is an ion. The most important aspect of this exercise is to see that the number of electrons tells us the charge (+ or -), the number of neutrons identifies the isotope and the number of protons identifies the element.

Generic Isotope Symbol:



A = Mass Number Z = Atomic Number X = Atomic Symbol

Mass Number = # protons + # neutrons

Atomic Number = # protons = the identity of the element

Atomic Symbol = chemical symbol of the element