Isotope Notation

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Any given element can have more than one isotope. To distinguish between the different isotopes of an atom, the element is named with its mass number, for example lithium-7. Remember that the mass number is the number of protons and neutrons. When symbols are used to represent an isotope the mass number is written next to the symbol on the top left. The atomic number is written on the

botto	m left. Recall that the atomi	e numbe	er is the r	umber	of protons.				
EXAMP	LES Mass number	${}^{\mathrm{A}}_{\mathrm{Z}}\mathrm{X}$			${}_{3}^{7}\text{Lithiu}$	<u>n-7</u> 3 prote 4 neut	ons rons		
Ansv	ver the following question	ons abo	out atom	ns.					
1.	The identity of an atom is	determi	ned by the	e numb	per of			ċ	
2.	The particle(s) found insid	e the nu	cleus are	called		almantalan ay second dara saya dalamini alman d		-*	
3.	The number of protons and	d neutro	ns combi	ned is a	called the	dengen, antas estato to control to be estato - ao estato -	an fer en fer en fer an de fer en	_*	
4.	In large atoms the number	of prote	ons is		than the	number	of neutron	18.	
5.	The number of protons is also called the								
6.	Isotopes have the same number of, but different numbers of								
7.	The number of protons for	ind in a	sulfur ato	m is _	· ·				
8.	The number of neutrons for	ound in a	ın alumin	um-27	atom is	*			
9.	The number of electrons found in a zinc atom is								
10.	10. What is the name of the element with 82 protons?								
Give atom	the symbols for the nuc ic number and the mass	lides d numb	escribe er.	d by t	he followin	ng partio	eles. Inc	lude the	9
11.	92 protons, 145 neutrons			15.	20 protons	s, 20 neut	rons		
12.	8 protons, 10 neutrons			16.	22 protons	s, 23 neut	rons		
13.	82 protons, 125 neutrons			17.	18 protons	, 22 neut	rons		
14.	80 protons, 119 neutrons			18.	25 protons	, 32 neut	rons		
Dete	ermine the number of	proto	ons and	l neu	trons fro	m the	ollowi	ng syn	nbols.
19.	¹⁰ ₅ B	23.	¹⁶⁵ ₆₆ Dy			27.	¹²⁶ Te		
20.	$rac{15}{7}\mathbf{N}$	24.	⁵⁶ Fe			28.	³⁵ Cl		
21.	⁷⁹ ₃₄ Se	25.	¹⁵¹ Sm			29.	¹⁰⁷ Ag		
22.	¹¹⁹ ₅₀ Sn	26.	¹⁹⁵ Pt			30.	$^{93}_{41}?$		

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Any given element can have more than one isotope. To distinguish between the different isotopes of an atom, the element is named with its mass number, for example lithium-7. Remember that the mass number is the number of protons and neutrons. When symbols are used to represent an isotope the mass number is written next to the symbol on the top left. The atomic number is written on the bottom left. Recall that the atomic number is the number of protons. Lithium-7 **EXAMPLES** $\begin{array}{c} \text{Mass number} & & \\ \text{Atomic number} & & \\ & &$ $^{7}_{3}\text{Li}$ 3 protons 4 neutrons Answer the following questions about atoms. 1. The particle(s) found inside the nucleus are called: ______ 2. The number of protons and neutrons combined is called the **Mass number**. 3. In large atoms the number of protons is <u>more</u> than the number of neutrons. 4. The number of protons is also called the <u>atomic number</u>. 5.

6. Isotopes have the same number of protons, but different numbers of neutrons.

7. The number of protons found in a sulfur atom is <u>16</u>

8. The number of neutrons found in an aluminum-27 atom is <u>14</u>.

9. The number of electrons found in a zinc atom is <u>30</u>

10. What is the name of the element with 82 protons? <u>lead</u>

Give the symbols for the nuclides described by the following particles. Include the atomic number and the mass number.

11.	92 protons, 145 neutrons 42.0	15.	20 protons, 20 neutrons	40 Ca
12.	8 protons, 10 neutrons	16.	22 protons, 23 neutrons	45 Ti
13.	82 protons, 125 neutrons	17.	18 protons, 22 neutrons	40 Ar
14.	80 protons, 119 neutrons 899Hg	18.	25 protons, 32 neutrons	57 Mn

Determine the number of protons and neutrons from the following symbols.

19.	¹⁰ ₅ B 5pt, 5n°	23.	¹⁶⁵ ₆₆ Dy	66pt, 990°	27.	¹²⁶ Te	52 pt, 74 n°
20.	¹⁵ ₇ N 7pt, 8n°	24.	⁵⁶ Fe	26pt, 3000	28.	³⁵ Cl	17pt, 18n°
21.	⁷⁹ Se 34pt 45~°	25.	¹⁵¹ Sm	62pt, 89n°	29.	¹⁰⁷ Ag	47 pt, 60 n°
22.	119 Sn 50pt, 69 nº	26.	¹⁹⁵ Pt	78pt, 117nº	30.	$^{93}_{41}?$	41pt, 5200