

Atomic Number, Mass Number, Isotopes, and Stuff

1 Complete the following questions. Assume all atoms are neutral.



element: _____

protons: _____

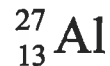
neutrons: _____



element: _____

atomic #: _____

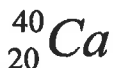
mass #: _____



element: _____

protons: _____

electrons: _____

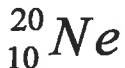


element: _____

protons: _____

neutrons: _____

electrons: _____



element: _____

atomic #: _____

electrons: _____

atomic mass: _____



element: _____

protons: _____

electrons: _____

neutrons: _____



element: _____

atomic #: _____

mass #: _____

electrons: _____



element: _____

atomic #: _____

electrons: _____

neutrons: _____



element: _____

protons: _____

electrons: _____

neutrons: _____

2. Write the symbol for the isotope...

a. with 8 protons and 8 neutrons

c. with atomic # 11 and mass # of 23

b. with 28 protons and 30 neutrons

d. with 92 protons and mass # 238

How many neutrons are in this isotope? _____

1. Here are three isotopes of an element: ${}^12_6\text{C}$ ${}^{13}_6\text{C}$ ${}^{14}_6\text{C}$

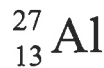
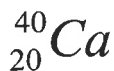
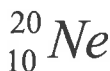
- The element is: _____
- The number 6 refers to the _____
- The numbers 12, 13, and 14 refer to the _____
- How many protons and neutrons are in the first isotope? _____
- How many protons and neutrons are in the second isotope? _____
- How many protons and neutrons are in the third isotope? _____

2. Complete the following chart:

Isotope name	atomic #	mass #	# of protons	# of neutrons	# of electrons
Uranium-235					
Chlorine-35					
Calcium-48					
Strontium-90					
Bismuth-209					
Boron-11					
			22	22	
				30	26
	15	32			
			34	45	
		208		127	
				146	94

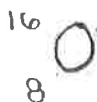
Atomic Number, Mass Number, Isotopes, and Stuff

1. Complete the following questions. Assume all atoms are neutral.

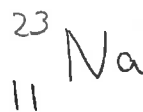
element: Helium# protons: 2# neutrons: 2element: Ironatomic #: 26mass #: 56element: Aluminum# protons: 13# electrons: 13element: Calcium# protons: 20# neutrons: 20# electrons: 20element: Neonatomic #: 10# electrons: 10atomic mass: 20element: Carbon# protons: 6# electrons: 6# neutrons: 8element: Fluorineatomic #: 9mass #: 19# electrons: 9element: Hydrogenatomic #: 1# electrons: 1# neutrons: 0element: Hydrogen# protons: 1# electrons: 1# neutrons: 1

2. Write the symbol for the isotope...

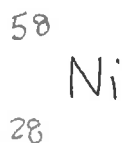
a. with 8 protons and 8 neutrons



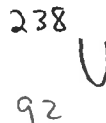
c. with atomic # 11 and mass # of 23



b. with 28 protons and 30 neutrons



d. with 92 protons and mass # 238

How many neutrons are in this isotope? 146

$$\begin{array}{r} 238 \\ - 92 \\ \hline 146 \end{array}$$

1. Here are three isotopes of an element: ${}^12_6\text{C}$ ${}^{13}_6\text{C}$ ${}^{14}_6\text{C}$

- The element is: Carbon
- The number 6 refers to the atomic number
- The numbers 12, 13, and 14 refer to the mass number
- How many protons and neutrons are in the first isotope? P=6 N=6
- How many protons and neutrons are in the second isotope? P=6 N=7
- How many protons and neutrons are in the third isotope? P=6 N=8

2. Complete the following chart:

Isotope name	atomic #	mass #	# of protons	# of neutrons	# of electrons
Uranium-235	92	235	92	143	92
Chlorine-35	17	35	17	18	17
Calcium-48	20	48	20	28	20
Strontium-90	38	90	38	52	38
Bismuth-209	83	209	83	126	83
Boron-11	5	11	5	6	5
Titanium-44	22	44	22	22	22
Iron-56	26	56	26	30	26
Phosphorus-32	15	32	15	17	15
Selenium-79	34	79	34	45	34
Thallium-208	81	208	81	127	81
Plutonium-240	94	240	94	146	94