

ISOTOPE PRACTICE WORKSHEET

1. What is the relationship between mass number, number of protons, and number of electrons?

2. 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? _____

3. Fill in the isotope names and any missing information on the chart. Use the periodic table and the information provided. Assume all atoms are neutral.

	-22	-25
# of protons		
# of neutrons		
# of electrons	11	

4. Assuming all atoms are neutral, complete the following chart:

Isotope	atomic #	mass #	# of protons	# of neutrons	# of electrons
uranium-235					
uranium-238					
boron-10					
boron-11					

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Answers

1. What is the relationship between mass number, number of protons, and number of electrons?

Mass number = Number of protons + Number of neutrons

2. 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 atomic mass

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

3. Fill in the isotope names and any missing information on the chart. Use the periodic table and the information provided. Assume all atoms are neutral.

	Sodium-22	Sodium-25
# of protons	11	11
# of neutrons	11	14
# of electrons	11	11

4. Assuming all atoms are neutral, complete the following chart:

Isotope	atomic #	mass #	# of protons	# of neutrons	# of electrons
uranium-235	92	235	92	143	92
uranium-238	92	238	92	146	92
boron-10	5	10	5	5	5
boron-11	5	11	5	6	5