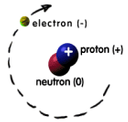
Atoms Study Guide



1. Draw and label a Helium atom:
(Label the nucleus with protons & neutrons and the correct number of orbiting electrons using the symbols below)

2
He
Helium
4.003

how many?

Ⓝ Neutrons _____ ⊕ Protons _____ ⊖ electrons _____

2. Atomic mass comes from adding _____+ _____ (in nucleus).

3. The atomic number comes from the _____ of _____ in the nucleus.
4. What is the atomic number for Tin? _____
5. What is the Atomic mass for Tin? _____
6. How many protons _____
electrons _____
neutrons _____

50
Sn
Tin
118.69

show math:

7. Electrons have a _____ charge
8. Neutrons have a _____ charge
9. Protons have a _____ charge
10. What is the definition of an **isotope**? _____
_____

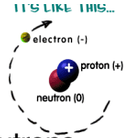
11.The isotopes will have **different numbers of** _____.but the **same number** of _____ and _____. Draw and label 3 different hydrogen **isotopes.**

The isotopes will have a mass of 1, 2, and 3 amu.

1 H 1 **H** isotope with mass=1	**2 H 1** **H** isotope with mass=2	**3 H 1** **H** isotope with mass=3

12. On back, Make a labelled diagram of the Rutherford experiment. (CPO book pg. 120 or internet). Show and describe (in words) how Rutherford found evidence for:
a. the atom being mostly empty space and b. the existance of a small nucleus containing most of the mass of the atom.

Atoms Study Guide



1. Draw and label a Helium atom:
(Label the nucleus with protons & neutrons and the correct number of orbiting electrons using the symbols below)

2
He
Helium
4.003

how many?

Ⓝ Neutrons _____ ⊕ Protons _____ ⊖ electrons _____

2. Atomic mass comes from adding _____+ _____ (in nucleus).

3. The atomic number comes from the _____ of _____ in the nucleus.
4. What is the atomic number for Tin? _____
5. What is the Atomic mass for Tin? _____
6. How many protons _____
electrons _____
neutrons _____

50
Sn
Tin
118.69

show math:

7. Electrons have a _____ charge
8. Neutrons have a _____ charge
9. Protons have a _____ charge
10. What is the definition of an **isotope**? _____
_____

11.The isotopes will have **different numbers of** _____.but the **same number** of _____ and _____. Draw and label 3 different hydrogen **isotopes.**

The isotopes will have a mass of 1, 2, and 3 amu.

1 H 1 **H** isotope with mass=1	**2 H 1** **H** isotope with mass=2	**3 H 1** **H** isotope with mass=3

12. On back, Make a labelled diagram of the Rutherford experiment. (CPO book pg. 120 or internet). Show and describe (in words) how Rutherford found evidence for:
a. the atom being mostly empty space and b. the existance of a small nucleus containing most of the mass of the atom.