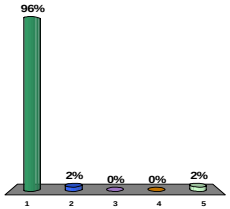
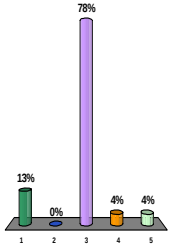
Any material that is made up of only one type of atom is classified as

1. an element.
2. an isotope.
3. molecularly pure.
4. radioactive
5. a substance.



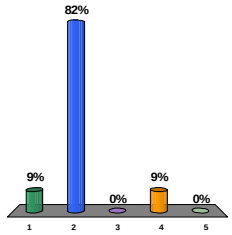
The periodic table lists

1. ions, atoms, and molecules.
2. less than 100 elements.
3. more than 100 elements.
4. more than 100 molecules.
5. naturally occurring elements only



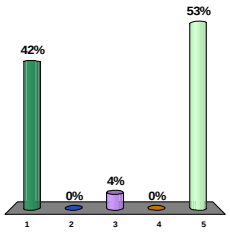
The most abundant element in the universe is

1. helium.
2. hydrogen.
3. iron.
4. oxygen.
5. silicon



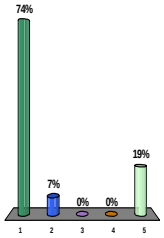
The origin of the elements is

1. Earth itself.
2. nature's secret.
3. the Sun.
4. a scientific secret
5. the stars.



We know that atoms are

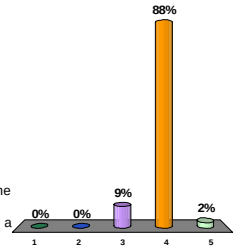
1. all of these choices.
2. the composition of all matter
3. perpetually moving.
4. recycling among innumerable forms.
5. tinier than the wavelengths of visible light.



How many groups are there in the periodic table?

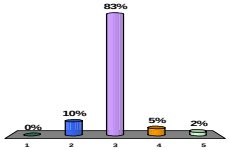
1. One.
2. Three.
3. Seven.
4. Eighteen.
5. Thirty-Six.

A group is a set of elements with similar physical and chemical properties. Elements within the same vertical column in the periodic table are in a group (or sometimes called a *family*).



How many periods are there in the periodic table?

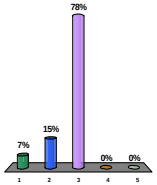
1. One.
2. Three
3. Seven.
4. Eighteen.
5. Thirty-Six.



A period is a set of elements whose physical and chemical properties gradually change with each increase in atomic number. Elements within the same horizontal row in the periodic table are in a single period.

The symbol CO denotes

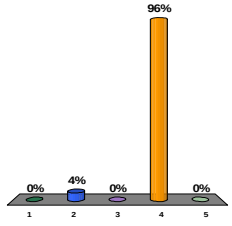
1. all of these choices.
2. carbon dioxide.
3. combination of carbon and oxygen.
4. the element cobalt.
5. oxidized cobalt.



Only the first letter of an atomic symbol is capitalized. For example, helium is He, lithium is Li, Co is cobalt, and so forth. Oxygen is simply O and carbon C.

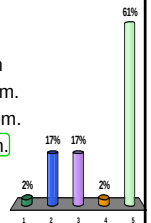
Which of the following particles are electrically neutral?

1. All of these choices.
2. Electron.
3. Ion.
4. Neutron.
5. Proton.



The atomic number of an element matches the number of

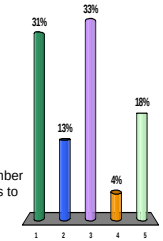
1. electrons in an ion of the same atom.
2. electrons plus protons in an atom
3. neutrons in the nucleus of an atom.
4. nucleons in the nucleus of an atom.
5. protons in the nucleus of an atom.



The mass number of an element refers to the number of

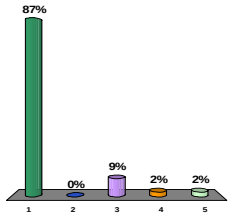
1. all of these choices.
2. neutrons in its nucleus.
3. nucleons in its nucleus.
4. number of electrons
5. protons in its nucleus.

Nucleons include protons and neutrons. Atomic number refers to the number of protons; mass number refers to the number of nucleons (protons + neutrons).



An atom with an atomic number of 10 and a mass number of 22 must have

1. all of these choices.
2. 10 electrons.
3. 12 neutrons.
4. 22 nucleons.
5. 10 protons.



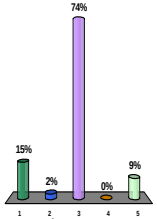
A nucleus with an atomic number of 30 and a mass number of 65 must have

1. all of these choices.
2. 30 neutrons.
3. 35 neutrons.
4. 65 neutrons.
5. 95 nucleons

Be sure to distinguish between *neutron* and *nucleon*. A neutron *is* a nucleon, as is a proton.

Atoms are best described using

1. All of these choices.
2. arm waving.
3. conceptual models.
4. physical models.
5. their microscopic images.

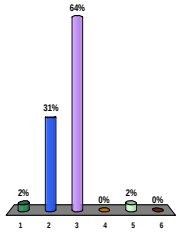


Explanation:
We can't see atoms in the usual sense because they are so small—smaller than the wavelengths of visible light. Atoms are better described using conceptual models, which help us to understand their behavior.

The shell model of the atom views electrons as occupying

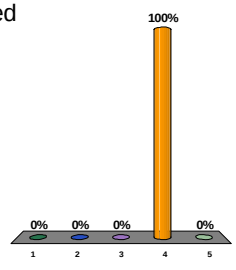
1. all of these choices
2. circular or elliptical orbits.
3. shells.
4. standing waves.
5. three-dimensional orbitals.

This is not a trick questions…



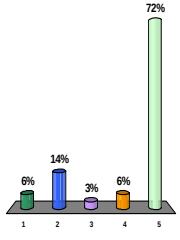
Electrons in the outermost shells of atoms are called

1. chemical electrons.
2. other electrons.
3. nuclear electrons.
4. valence electrons.
5. wave electrons.



The lanthanides are much like a group of elements because

1. they are all metallic.
2. their atomic numbers are consecutive.
3. they extend the height of the periodic table.
4. they form alloys.
5. they share similar properties.



Helium, He, is a nonmetallic gas and the second element in the periodic table. Rather than being placed adjacent to hydrogen, H, however, helium is placed on the far right of the table. Why?

1. Hydrogen and helium repel one another
2. The sizes of their atoms are vastly different.
3. They come from different sources
4. Helium is most similar to other group 18 elements
5. None of these choices