

Matching Questions

- i. A pure substance in which all atoms have the same number of protons.
element
- j. A pure substance composed of two or more chemically bonded elements.
compound (or molecule)

Multiple Choice Questions

- 6. Consider the element magnesium. Which statement is *true*?
(d) It is an alkaline earth metal.
- 11. Which of these elements will be most like fluorine in its chemical properties?
(a) chlorine

Short Answer Questions

- 3. Which illustrations in Figure 11.29 represents
 - a. Mixtures?
(b) and (d)
 - b. Compound?
(e)
 - c. Only element?
(a) and (c)
 - d. Only diatomic molecules?
(c)
- 6. What characteristic distinguishes an element from a compound?
An element is contains elements that all have the same number of protons.
A compound contains elements with different number of protons.
- 19. Why are chemists so interested in the number of valence electrons in atoms?
Because the valance electrons form the chemical bonds.
Because it allows us to determine what elements are similar.

Exercises

1. Classify each of the following materials as an element, compound, heterogeneous mixture, or homogeneous mixture:

- a. air?
homogeneous mixture
- b. pure water?
compound
- c. diamond?
element (carbon)
- d. soil?
(heterogeneous mixture)

2. Classify each of the following materials as an element, compound, heterogeneous mixture, or homogeneous mixture:

- a. a fried egg?
heterogeneous mixture
- b. ozone?
element (oxygen)
- c. brass?
homogeneous mixture
- d. carbon dioxide?
compound

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17. Use the periodic table to find the atomic mass, atomic number, number of protons, and number of electrons for an atom of:

a. lithium

6.941AMU *atomic mass*
3 *atomic number*
3 *number of protons*
3 *number of electrons*

b. gold

197.0AMU *atomic mass*
79 *atomic number*
79 *number of protons*
79 *number of electrons*

18. Use the periodic table to find the atomic mass, atomic number, number of protons, and number of electrons for an atom of:

a. argon

39.948AMU *atomic mass*
18 *atomic number*
18 *number of protons*
18 *number of electrons*

b. strontium

87.62AMU *atomic mass*
38 *atomic number*
38 *number of protons*
38 *number of electrons*

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