1. Please fill in the empty cells in the table below.

Isotope Symbol	Atomic #	Mass #	# of protons	# of neutrons	# of electrons
	12	26			
				126	82

2. How many moles of sulfur are there in a 0.685-g sample of sulfur?
   a. 0.0214 mol
   b. 46.8 mol
   c. 22.0 mol
   d. 32.1 mol

3. Naturally occurring lithium (Li) consists of only two isotopes, Li-6 (6.02 amu) and Li-7 (7.02 amu), where the exact isotopic masses are given in parentheses. Use the periodic table and determine which isotope is present in the larger percentage in the natural element.
   a. $^{6}\mathrm{Li}$
   b. $^{7}\mathrm{Li}$
   c. The percentage of each isotope is about the same.
   d. The relative percent abundance cannot be determined from the information available.

4. The number of valence electrons of a representative element is related to which of the following?
   a. atomic number
   b. atomic weight
   c. group number
   d. period number

5. Convert the following number of moles into the corresponding mass.
5.22 mol Br

a. 15.3 g
b. 0.0653 g
c. 417 g
d. 79.9 g

6. What is the mass of one molecule of glucose, $C_6H_{12}O_6$?
a. 30.03 amu
b. 180.2 amu
c. 30.03 g
d. 180.2 g
e. 6.022×10^{23} amu

7. Use one the following terms to complete the given statement.
salt
sugar
vegetable oil

When _____ is added to water a heterogeneous mixture forms.

8. Enter the electron arrangement for the element potassium.

shell 1: _____, shell 2: _____, shell 3: _____, shell 4: _____

9. Enter the chemical symbol in the blank for the element described given below.

Representative element in period 4 whose chemical behavior resembles that of O.

Symbol for the element:_____

10. Enter the chemical symbol of the element in the blank.

An element in period 3 has the Lewis structure:

X should be replaced with what chemical symbol?

Chemical symbol:_____.

11. Enter the chemical symbol of the element in the blank.

Calcium forms the compound CaF_2 . What other alkaline earth element with a smaller atomic mass would form a compound with a similar formula?

Chemical symbol:_____.

12. Based on the text periodic table and using the correct number of significant figures, enter the appropriate number in the blank.

There are _____mol of $C_6H_8O_7$ in 72.36 g of citric acid, $C_6H_8O_7$.

13. Enter an integer number (1, 2, 3, ...) in the blank.

Sucrose (table sugar) has the formula $C_{12}H_{22}O_{11}$. A sample of sucrose contains 2400 carbon atoms. How many molecules does this represent?

_____formula units.

14. Classify the following statement as representing an intensive or extensive property by placing intensive or extensive in the blank.

“Vinegar tastes sour.”: _____

Answers

1.

Isotope Symbol	Atomic #	Mass #	# of protons	# of neutrons	# of electrons
$^{26}_{12}Mg$	12	26	12	14	12
$^{208}_{82}Pb$	82	208	82	126	82

2. a
3. b
4. c
5. c
6. b
7. vegetable oil
8. shell 1: 2 electrons, shell 2: 8 electrons, shell 3: 8 electrons, shell 4: 1 electron
9. Se
10. S
11. Mg or Be
12. 0.3766 mol
13. 200
14. intensive