

On numbers with a, b, and c do 2 of the 3.

1. Calculate the number of moles in each of the following:
 - a. 64.1 g of Al
 - b. 28.1 g of Si
2. A chemist has a jar containing 388.2 g of iron filings. How many moles of iron does the jar contain?
3. Calculate the mass of each of the following amounts:
 - a. 1.22 mol Na
 - b. 14.5 mol Cu
 - c. 0.275 mol Hg
4. A student needs 0.366 mol of Zn for a reaction. What mass of Zn in grams should the student obtain?
5. Calculate the amount in moles in each of the following quantities:
 - a. 3.01×10^{23} atoms of Rb
 - b. 8.08×10^{22} atoms of Kr
 - c. 5.7×10^9 atoms of Pb
6. Calculate the number of atoms in each of the following amounts:
 - a. 1.004 mol Bi
 - b. 2.5 mol Mn
 - c. 0.000 000 2 mol He
7. How many moles of Li are there in 1.204×10^{24} Li atoms?
8. Calculate the number of atoms in each of the following masses:
 - a. 54.0 g of Al
 - b. 69.45 g of La
 - c. 0.679 g of Ga
9. Calculate the mass of the following numbers of atoms:
 - a. 6.022×10^{24} atoms of Ta
 - b. 3.01×10^{21} atoms of Co
 - c. 1.506×10^{24} atoms of Ar

10. How many B atoms are there in 2.00 g of B?

11. How many protons, electrons, and neutrons make up an atom of bromine-80?

12. Write the nuclear symbol for carbon-13.

13. Write the hyphen notation for the isotope with 15 electrons and 15 neutrons.

14. Write the nuclear symbol for oxygen-16.

15. Write the hyphen notation for the element whose atoms have 7 electrons and 9 neutrons.

16. Naturally occurring boron is 80.02% boron-11 (atomic mass=11.01 amu) and 19.80% of some other isotopic form of boron. What must be the atomic mass of this second isotope be in order to account for the 10.81 amu average atomic mass of boron?