

WORKSHEET #1

A. Determine the number of atoms contained in the following.

1. 2.55 g of Copper
2. 0.396 g of Sodium
3. 16.42 g of Phosphorous
4. 0.317 g of Silver
5. 3.023 g of Flourine
6. 0.00391 g of Chromium
7. 7.765 g of Neon
8. 5.0 g of Oxygen
9. 13.66 g of Nickel
10. 6.25 g of Potassium
11. 0.11 g of Hydrogen
12. 0.0096 g of Iron
13.  $1.69 \times 10^{-10}$  g of Gold
14. 2.1 g of Lithium
15. 200 mg of Arsenic
16.  $2 \times 10^{-5}$  g of Platinum

B. Calculate the mass (in grams).

1.  $6.006 \times 10^{10}$  atoms of Iron
2.  $0.7724 \times 10^{20}$  atoms of Sodium
3.  $1.0054 \times 10^{29}$  atoms of Gold
4.  $3.9 \times 10^{16}$  atoms of Mercury
5.  $4.5 \times 10^{60}$  atoms of Argon
6.  $3.0 \times 10^{-3}$  moles of Manganese
7. .0196 moles of Oxygen
8.  $3 \times 10^{-6}$  moles of Carbon
9.  $4.44 \times 10^{-8}$  moles of Magnesium
10. 3.025 moles of Boron

Answers:

A.

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|-----------------------------------|-----------------------------------|
| 1. $2.42 \times 10^{22}$ atoms Cu | 9. $1.40 \times 10^{23}$ atoms Ni |
| 2. $1.04 \times 10^{21}$ atoms Na | 10. $1.21 \times 10^{23}$ atoms P |
| 3. $3.09 \times 10^{23}$ atoms P  | 11. $6.6 \times 10^{22}$ atoms H  |
| 4. $1.77 \times 10^{22}$ atoms Ag | 12. $1.0 \times 10^{20}$ atoms Fe |
| 5. $9.58 \times 10^{22}$ atoms F  | 13. $5.16 \times 10^{11}$ atoms A |
| 6. $4.53 \times 10^{19}$ atoms Cr | 14. $1.8 \times 10^{23}$ atoms Li |
| 7. $2.31 \times 10^{23}$ atoms Ne | 15. $1.61 \times 10^{21}$ atoms A |
| 8. $1.9 \times 10^{23}$ atoms O   | 16. $6 \times 10^{16}$ atoms Pt   |

B.

- |                                |                               |
|--------------------------------|-------------------------------|
| 1. $5.57 \times 10^{-12}$ g Fe | 6. $1.6 \times 10^{-1}$ g Mn  |
| 2. $2.95 \times 10^{-3}$ g Na  | 7. $3.14 \times 10^{-1}$ g O  |
| 3. $3.29 \times 10^7$ g Au     | 8. $4 \times 10^{-5}$ g C     |
| 4. $1.3 \times 10^{-5}$ g Hg   | 9. $1.08 \times 10^{-6}$ g Mg |