

The Mole Lesson 2 Check for Understanding  
**Single Step & Multi-Step Mole Calculations**

**PART ONE: Directions:** Solve the following problems in your journal. Be sure to show all work. **Directions:** Use units in your final answer and round to the proper number of sig figs.

1. How many grams are in 11.9 moles of chromium, Cr?
  
  
  
  
  
  
  
  
  
  
2. How many moles are in  $1.20 \times 10^3$  grams of ammonia,  $\text{NH}_3$  ?
  
  
  
  
  
  
  
  
  
  
3. How many moles of carbon, C are in  $2.25 \times 10^{22}$  atoms?
  
  
  
  
  
  
  
  
  
  
4. How many atoms are in 3.80 mol of sodium, Na?
  
  
  
  
  
  
  
  
  
  
5. How many formula units are in 12.02 moles of barium chloride,  $\text{BaCl}_2$ ?
  
  
  
  
  
  
  
  
  
  

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6. How many atoms are in 0.020 grams of carbon, C?
  
  
  
  
  
  
  
  
  
  
7. How many molecules are in 77.1 g of chlorine,  $\text{Cl}_2$ ?
  
  
  
  
  
  
  
  
  
  
8. How many formula units are in 24.0 grams of iron (III) fluoride,  $\text{FeF}_3$ ?
  
  
  
  
  
  
  
  
  
  
9. How many formula units are in 230 grams of ammonium hydroxide,  $\text{NH}_4\text{OH}$ ?

## Find the Percent Composition

### Example

Find the percent composition of copper (Cu) in  $\text{CuBr}_2$ .

$$\frac{\text{Mass of element in the Compound}}{\text{Total Mass of Compound}} \times 100 = \text{Percent Composition}$$

$$\frac{63.546 \text{ grams Cu}}{223.354 \text{ grams CuBr}_2} \times 100 = 28.4\%$$

## Percent Composition Practice

**PART TWO:** Find the percent compositions of all of the elements in the following compounds. Be sure to show all work. Use units in your final answer and round to the nearest hundredth (two places after the decimal).



% K: \_\_\_\_\_

% S: \_\_\_\_\_

% O: \_\_\_\_\_

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% N: \_\_\_\_\_

% H: \_\_\_\_\_

% S: \_\_\_\_\_

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% Mg: \_\_\_\_\_

% N: \_\_\_\_\_

% O: \_\_\_\_\_

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