



Name: \_\_\_\_\_ Period: \_\_\_\_\_

Assigned on Wednesday, April 22, 2026

### 15.3 Mole Review

Due Wednesday, April 22, 2026

1. What is the representative particle of each of the following types of matter?
  - a. element: \_\_\_\_\_
  - b. molecular compound: \_\_\_\_\_
  - c. ionic compound: \_\_\_\_\_
2. How many representative particles are in a mole of anything? \_\_\_\_\_
3. Determine the molar mass of each of the following substances:
  - a) Xe: \_\_\_\_\_
  - b) carbon: \_\_\_\_\_
  - c)  $\text{Li}_2\text{S}$ : \_\_\_\_\_
  - d) magnesium nitrate: \_\_\_\_\_
4. Perform the following molar conversions showing your work using dimensional analysis.
  - a) There are \_\_\_\_\_ formula units in 5.8 moles of  $\text{Na}_2\text{CO}_3$ .
  
  - b) If you have  $5.24 \times 10^{26}$  atoms of uranium, how many moles do you have?
  
  - c) Calculate the number of moles of  $\text{NH}_4\text{NO}_3$  you have if you have  $4.57 \times 10^{15}$  formula units of  $\text{NH}_4\text{NO}_3$ .
  
  - d) How many carbon atoms are present in 3.656 g of C?
  
  - e) A sample contains 30.0 grams of  $\text{XeF}_4$ . How many molecules of  $\text{XeF}_4$  are in the sample?
  
  - f) What is the mass of  $6.068 \times 10^{45}$  molecules of  $\text{SO}_2$ ?
  
  - g) Mercury has a density of 13.53 g/mL. If a sample of mercury contains  $2.55 \times 10^{24}$  atoms, what volume (in mL) of mercury is present?