

Name: _____ Per _____

Unit 5 Review Prep

The Mole

1. How do you calculate Molar Mass?
2. Calculate the molar mass for the following substances.
 - a. K
 - b. $\text{Al}_2(\text{CO}_3)_3$
 - c. Bromine
 - d. Titanium (III) chloride
3. Complete the following conversions.
 - a. What is the mass of 3.50 moles of uranium?
 - b. What is the mass of 2.4×10^{23} molecules of aluminum nitrate?
 - c. Determine the number of molecules in 9.35 kg of sodium chloride.
 - d. How many atoms are contained in 0.75 moles of carbon?
 - e. Determine the number of molecules in 23 grams dinitrogen tetroxide. How many atoms are there in each element?

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4. Write the formula, or name the following hydrates.

- a. $\text{Na}_2\text{CO}_3 \cdot 10 \text{H}_2\text{O}$
- b. Strontium iodate monohydrate
- c. $\text{CrCl}_3 \cdot 6 \text{H}_2\text{O}$
- d. Iron (III) sulfate tetrahydrate

5. Determine the percent composition for each of element in the following compounds.

- a. CaC_2O_4
- b. $\text{Sr}_3(\text{PO}_4)_2$

6. Citric acid is the type of acid found in fruits such as lemons and oranges. The chemical formula is $\text{C}_6\text{H}_8\text{O}_7$. Determine the percent composition for each element.

7. The compound $\text{Fe}(\text{NO}_3)_2 \cdot 9 \text{H}_2\text{O}$ is used in fingerprint analysis.

- a. Give the chemical name for this compound.
- b. Determine the percent composition for each element in the compound.
- c. Determine the percent composition of water in the compound.