COLEGIO CUMBRES
"FORMACIÓN PARA TRASCENDER"

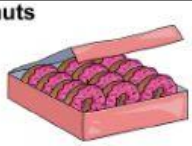
CLASS ACTIVITY 5
The mole concept introduction
Chemistry 10th

Name: _____ **Date :** _____ **10:**_____

INSTRUCTIONS:

- ✓ Observe the information in the chart carefully
- ✓ Solve the exercises in part 1 before proceeding to part 2

PART 1

Eggs	**Cookies**	**Donnuts** 	**Roses**
1 dozen	**1 dozen**	**1 dozen**	**1 dozen**
12 eggs	12 cookies	12 donnuts	12 roses
Mass of the dozen or mass of one dozen (g / dozen)			
20g / dozen	15g / dozen	25g / dozen	10g / dozen

Based on the above information answer the following questions.
Write your answer on the line and show any math operation, wherever you are asked to do so.

	Question	Answer
1.1	**How many eggs** are there in 3 dozen eggs?	
Procedure:		
1.2	**How many roses** are there in 3 dozen roses?	
1.3	**How many donnuts** are there in 2 dozen donnuts?	
1.4	What is **the mass (grams)** of 3 dozen eggs?	
Procedure:		
1.5	What is **the mass (grams)** of 3 dozen roses?	
1.6	**How many cookies** are there in 52.5g of cookies?	
Procedure:		

1.7 Your explanation
Why do 3 dozen eggs have a different mass that 3 dozen roses **if both have the same number of units?**
Explain your answer clearly (3 lines min – 70 words min)

PART 2

The **MOLE** is the unit used in chemistry to deal with **large amounts of very tiny particles** such as atoms, molecules and ions.
In the same way a dozen contains 12 units of something, 1 mole of anything contains 6.022×10^{23} particles.

Calcium Ca	Water H_2O	Carbon Monoxide CO	Copper Cu
1 mole	1 mole	1 mole	1 mole
6.022×10^{23} atoms	6.022×10^{23} molecules	6.022×10^{23} molecules	6.022×10^{23} atoms
Mass of a mole of substance, Molar mass or mass of 1 mole (g/ mol)			
40g / mol	18g / mol	28 g / mol	63.5g / mol

Based on the above information answer the following questions.
Write your answer on the line and show any math operation, wherever you are asked to do so.

	Question	Answer
1.1	**How many atoms** of Calcium Ca are there in 3 moles?	
Procedure:		
1.2	**How many atoms** of Copper Cu are there in 3 moles?	
1.3	What is **the mass (grams)** of 3 moles of Calcium Ca?	
Procedure:		
1.4	What is **the mass (grams)** of 3 moles of Copper Cu?	

1.5 Your explanation

Why do 3 moles of Calcium have a different mass than 3 moles of Copper Cu if **both have the same number of atoms?**
Explain your answer clearly (3 lines min – 70 words min)

	Question	Answer
1.6	**How many water molecules** are there in 81g of water H2O?	
Procedure:		
1.7	What is **the mass (grams)** of 2.40×10^{24} molecules of Carbon Monoxide CO?	
Procedure:		