S'mores Stoichiometry Lab

Here is your "chemical reaction" (recipe) for making s'mores:

2 Gc + 3 Mm + 6 Cc ---> 1 Sm

Open your ingredients bag, and count & record the quantity of your ingredients:

# of Gc: _____ **# of Mm**: _____ **# of Cc**: _____

Now, use dimensional analysis to calculate how many S'mores (**Sm)** can be produced from each ingredient:

Graham crackers (Gc):

Marshmallows (Mm):

Chocolate chips (Cc):

Limiting Reactant = _____ **Theoretical Yield =** _____

- Once Mr. A checks your calculations, you are ready to proceed with the "chemical reaction"!

- **After** the s'mores are done baking, calculate the actual yield and % yield:

Actual Yield = _____ **% Yield =** _____

1 Gc = 4.19 g
1 Mm = 0.56 g
1 Cc = 0.54 g

ans bank (IRO+2): 2.0, 3.5, 8.2, 17.1, 21, 24.1

While you're cooking your s'mores, use dimensional analysis for 1 ~ 4:

1. How many Mm's are required to make 7 S'mores (Sm)?

2. How many Sm can be made with 29.5 g of Gc?

3. How many Sm can be made with **65.1 g Gc**, **7.20 g Mm**, and **6.48 g Cc**?
   (calculate how many Sm can be made with each ingredient, and circle the theoretical yield)

4. Suppose you had 120.0 g of Gc. How many g of Mm would you need such that you'd have no leftovers?

5. Explain why chemists would use the concept of *limiting reactant* when conducting chemical reactions, especially large scale reactions.