

CH 105 Supplemental Instruction

Email:

Website: CH105.yolasite.com

Sessions: Monday, 1:15-2:15, EB 128

Wednesday, 3:30-4:30, EB 133

Office Hour: Thursday, 3:30-4:30, EB 242 (Academic Success Center)

1. You have 4 moles of hydrogen atoms. How many individual atoms do you have?

$$4 \text{ moles H atoms} \left(\frac{6.02 \times 10^{23} \text{ atoms}}{1 \text{ mol}} \right) = 2.408 \times 10^{24} \text{ atoms}$$

2. Find the molar mass for the following compounds:

a. NaBr $23 + 80 = 103 \text{ g/mol}$

b. PbSO₄ $207 + 32 + (4 \times 16) = 303 \text{ g/mol}$

c. Ca(OH)₂ $40 + (2 \times 16) + (2 \times 1) = 74 \text{ g/mol}$

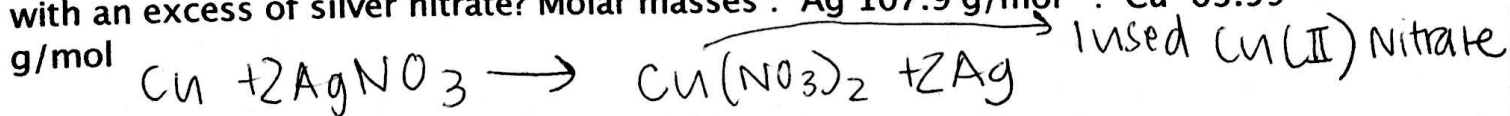
d. C₆H₁₂O₆ $(12 \times 6) + (12 \times 1) + (16 \times 6) = 180 \text{ g/mol}$

3. How many moles of methane are in 30.4 grams of methane?

CH₄
 $12 + (4 \times 1) = 16 \text{ g/mol}$

$$30.4 \text{ g CH}_4 \left(\frac{1 \text{ mol}}{16 \text{ g}} \right) = \boxed{1.9 \text{ moles CH}_4}$$

4. How many grams of silver can be made from the reaction of 13.4g of copper with an excess of silver nitrate? Molar masses : Ag 107.9 g/mol : Cu 63.55 g/mol



$$13.4 \text{ g Cu} \left(\frac{1 \text{ mol}}{64 \text{ g}} \right) \left(\frac{2 \text{ mol Ag}}{1 \text{ mol Cu}} \right) \left(\frac{108 \text{ g}}{1 \text{ mol Ag}} \right) = \boxed{45.2 \text{ g Ag}}$$

↳ comes from coefficients in equation

4. What is the formula for percent yield? What does "limiting reactant" mean?

$$\frac{\text{Actual yield}}{\text{Theoretical yield}} \times 100$$

limiting reactant is the reactant that determines the amt. of product made. opposite of excess or unlimited.