

Chemistry 20 - Unit 4 - Stoichiometry REVIEW

Name: _____

General Stoichiometry Procedure

With all stoichiometry problems, whether they are gravimetric, solution based, or gaseous, the procedure will remain the same. In order to calculate the number of moles, the volume, or the mass of a product or reactant based on another, follow this sequence of steps:

1. Write a balanced chemical equation detailing the reaction at hand. It is critical that the equation is balanced properly or your equation will not work, nor will your calculations!
2. Calculate the number of moles of your starting materials using the information given in the question and the appropriate formula. For solids, use gravimetric stoichiometry ($n = m/M$); for solutions, use solution stoichiometry ($n = CV$); for gases, use the ideal gas law ($n = PV/RT$). Identify if any of the reactants are Limiting or in Excess, this is done by comparing the number of moles needed to reaction one with the other... then seeing if you have enough moles of the other to complete the reaction.
3. Calculate the number of moles of desired material by multiplying by the appropriate mole-to-mole ratio. This can be expressed as "wanted over have." In other words, you will multiply by the coefficient of the desired material and divide by the coefficient of the starting material.
4. With the number of moles that you calculated in step three, calculate the desired quantity. Use the same formulas as before, although rearrange them as appropriate.

Practice (Textbook Pg. 309-311)

Questions 2, 5-9, 17, 19-25

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7. Calculate the number of moles of desired material by multiplying by the appropriate mole-to-mole ratio. This can be expressed as "wanted over have." In other words, you will multiply by the coefficient of the desired material and divide by the coefficient of the starting material.
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