

## Lesson 2: Gravimetric Stoichiometry and % error/yield

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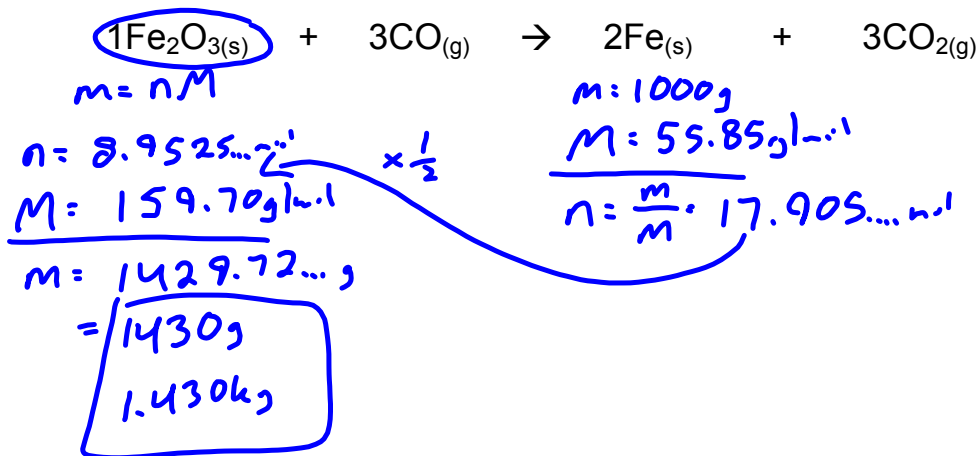
gravimetric = mass measurements  
(using  $m=nM$  formula)

### Steps

1. Write a balanced chemical equation including the states
2. Write the information given.
3. Find the moles of the given species using  $n=m/M$ .
4. Find the moles of the wanted species using mole ratio (wanted/given).
5. Calculate mass of the wanted species using  $m=nM$ .

Example:

Iron is produced by the reaction of iron (III) oxide with carbon monoxide to produce iron and carbon dioxide. What mass of iron (III) oxide is required to produce 1000 g of iron?



Example:

The decomposition of the mineral malachite  $[\text{Cu}(\text{OH})_2 \cdot \text{CuCO}_3]$  yields copper (II) oxide, carbon dioxide and water vapor. What mass of copper (II) oxide is produced from 1.00 g of malachite?

