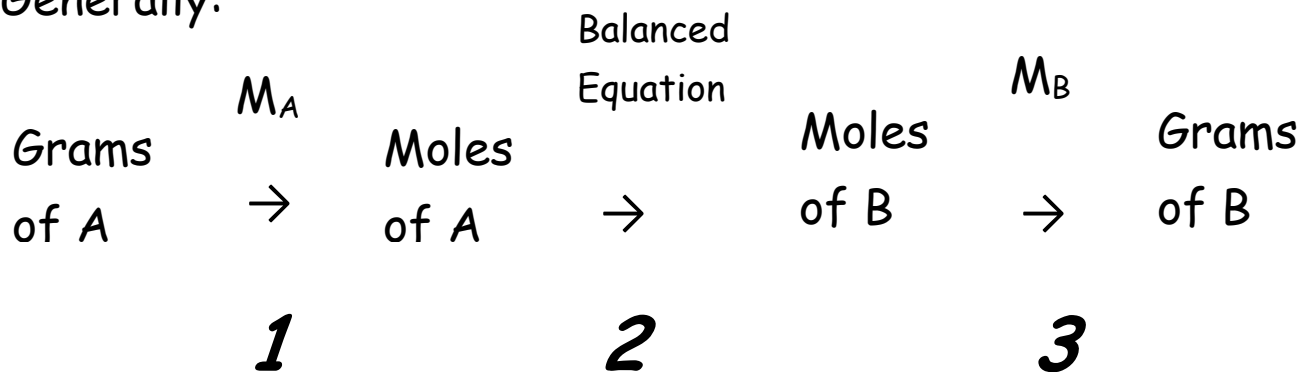


Stoichiometry Mass-to-Mass Problems

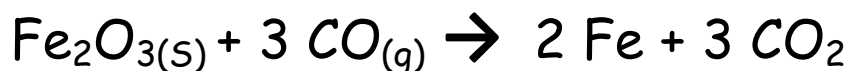
Generally:



M_A = Molar Mass of A M_B = Molar Mass of A

Ex..

If 425g of $\text{Fe}_2\text{O}_{3(s)}$ reacts with carbon monoxide, what mass of elemental iron will be produced?



$$M_{\text{FeO}_{3(s)}} = 2(55.85) + 3(16.00) = 159.70\text{g/mol}$$

$$1. \quad 425\text{g Fe}_2\text{O}_3 \times \frac{1 \text{ mole Fe}_2\text{O}_3}{159.70\text{g Fe}_2\text{O}_3} = 2.66 \text{ moles Fe}_2\text{O}_3$$

$$2. \quad 2.66 \text{ moles Fe}_2\text{O}_3 \times \frac{2 \text{ moles Fe}}{1 \text{ mole Fe}_2\text{O}_3} = 5.32 \text{ moles Fe}$$

$$3. \quad 5.32 \text{ moles Fe} \times \frac{55.85 \text{ g Fe}}{1 \text{ mole Fe}} = 297 \text{ g Fe}$$