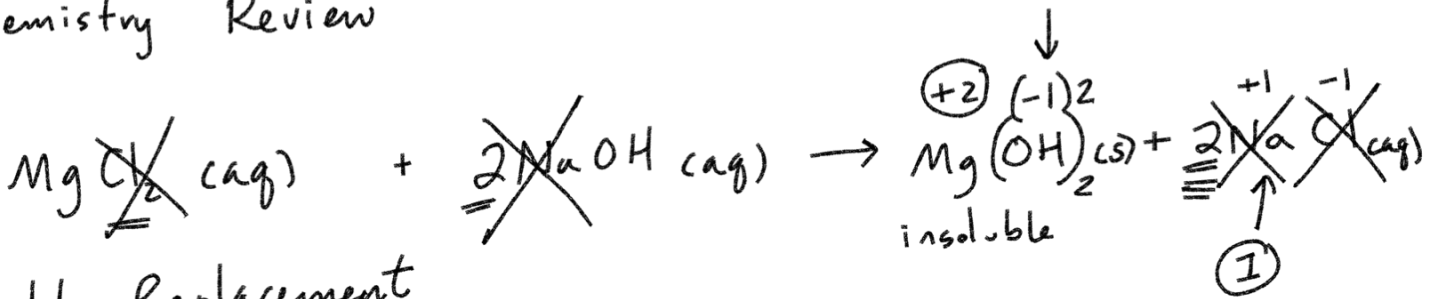
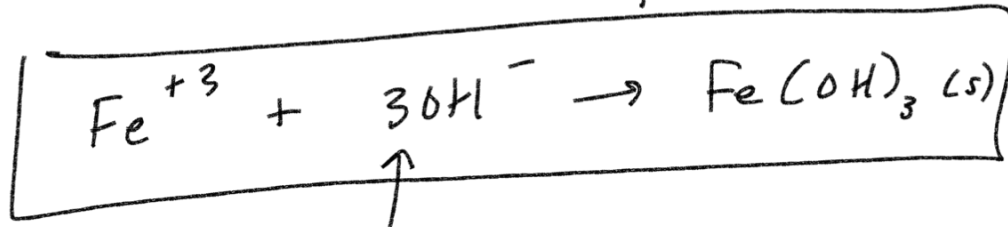
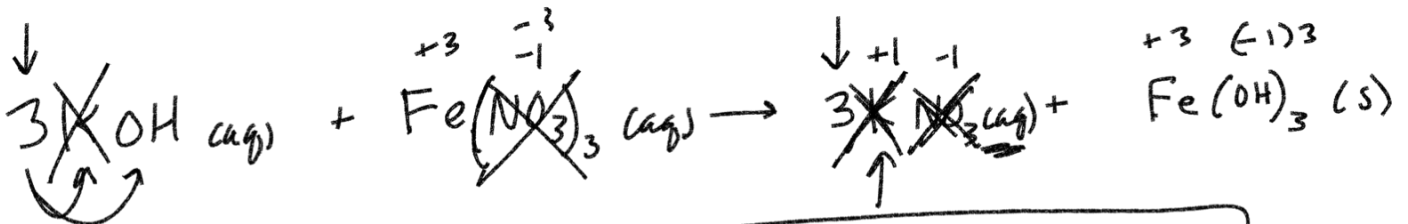
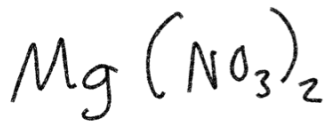
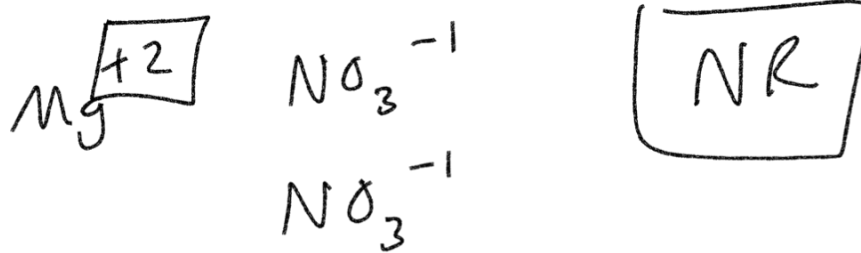
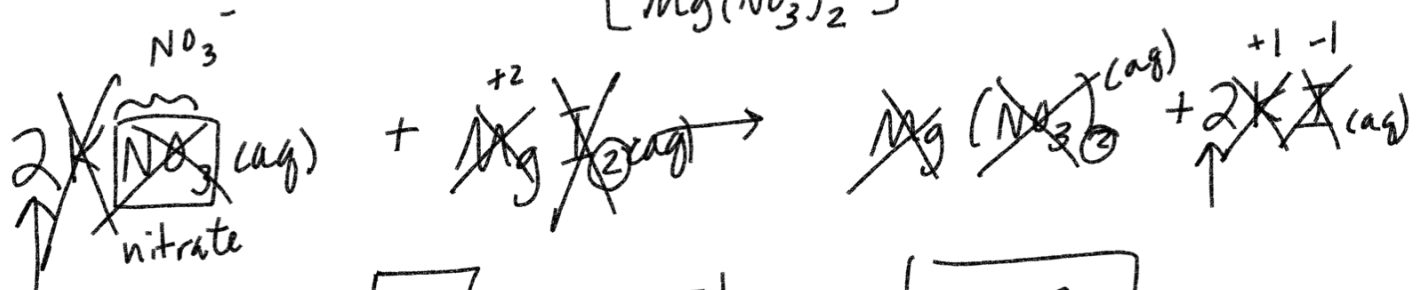
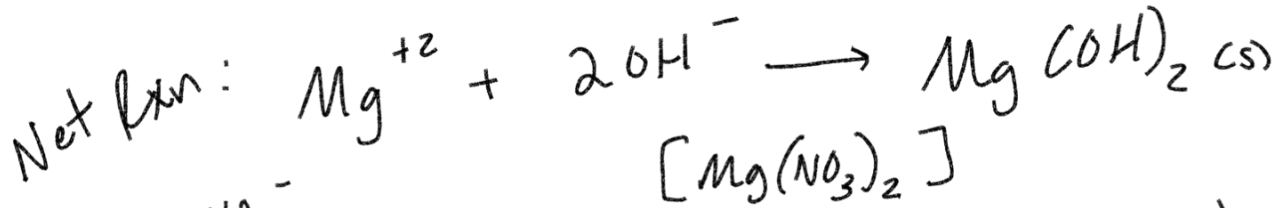
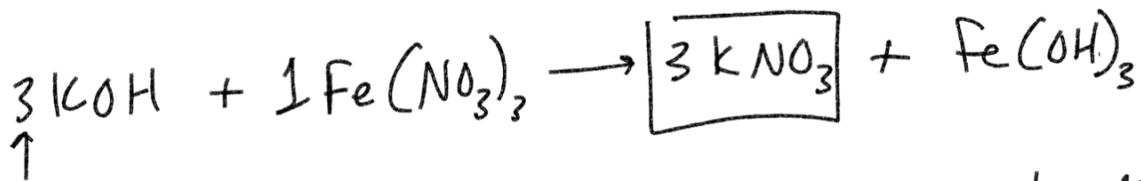


Chemistry Review



Double Replacement





180g KOH

240g $\text{Fe}(\text{NO}_3)_3$

mass of the excess reagent

Molar Mass

KOH

K - 39.098

O - 15.999

H - 1.008

56.105 g/mol

Molar Mass

$\text{Fe}(\text{NO}_3)_3$

Fe - 55.845

N - 3 * 14.007

O - 9 * 15.999

241.857 g/mol

KOH

180g KOH
excess reagent

$$\frac{1 \text{ mol KOH}}{56.105 \text{ g}}$$

$$* \frac{3 \text{ mol KNO}_3}{3 \text{ mol KOH}} = 3.21 \text{ mol KNO}_3$$

240g $\text{Fe}(\text{NO}_3)_3$
limiting reagent

$$* \frac{1 \text{ mol Fe}(\text{NO}_3)_3}{241.857 \text{ g}}$$

$$* \frac{3 \text{ mol KNO}_3}{1 \text{ mol Fe}(\text{NO}_3)_3} = \boxed{2.98 \text{ mol KNO}_3}$$

$$2.98 \text{ mol KNO}_3 * \frac{3 \text{ mol KOH}}{3 \text{ mol KNO}_3}$$

$$* \frac{56.105 \text{ g KOH}}{1 \text{ mol KOH}} = \underline{167.02 \text{ g KOH}}$$

$$180 \text{ g KOH} - 167.02 \text{ g} = 12.98 \approx \boxed{13 \text{ g KOH}}$$

mass of excess reagent

