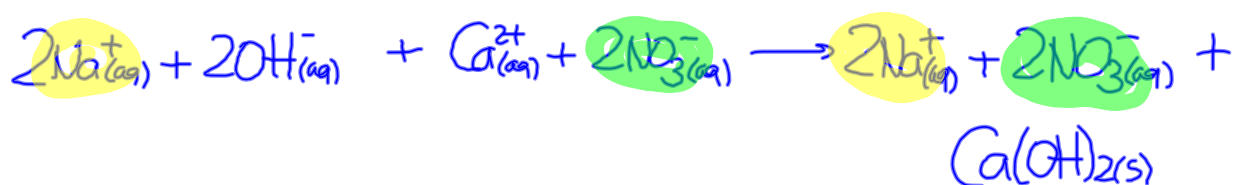
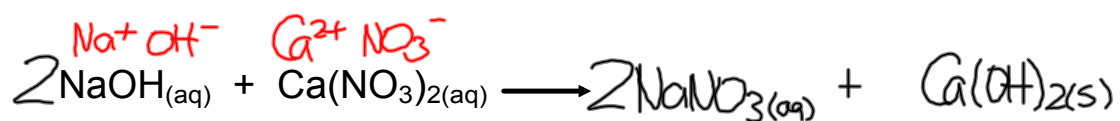


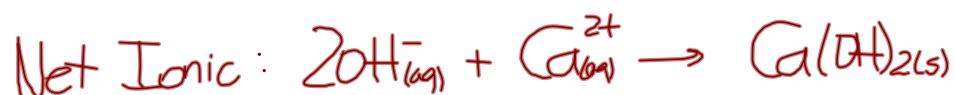
Solutions Review

- Net Ionic Equations
- Properties of Solutions
 - Solute/solvent, factors affecting rate of dissolving
- Solubility
- Concentration
- Dilutions

For the following double replacement reaction, write a complete ionic equation, a net ionic equation, and identify all spectator ions present.



Spectator: $\text{Na}^+_{(\text{aq})}$, $\text{NO}_3^-_{(\text{aq})}$



Determine the concentration of a solution in which 1.89 mol of KCl is dissolved in 2.70 L of water.

$$C = ?$$

$$n = 1.89 \text{ mol}$$

$$V = 2.70 \text{ L}$$

KCl

$$C = \frac{n}{V}$$

$$C = \frac{1.89 \text{ mol}}{2.70 \text{ L}}$$

$$C = 0.700 \text{ mol/L}$$

Determine the mass in 1.50L of a 0.80M NaNO_3 solution. ↖ 0.80 mol/L

$$m = ?$$

$$V = 1.50 \text{ L}$$

$$C = 0.80 \text{ M}$$



$$C = \frac{n}{V}$$

$$0.80 \text{ mol/L} = \frac{n}{1.50 \text{ L}}$$

$$n = (0.80 \text{ mol/L})(1.50 \text{ L})$$

$$n = 1.20 \text{ mol}$$

$$1.20 \text{ mol NaNO}_3 \times \frac{85.00 \text{ g NaNO}_3}{1 \text{ mol NaNO}_3} = \boxed{102 \text{ g NaNO}_3}$$

Calculate the final concentration of a solution in which 240. mL of water is added to 80.0 mL of a 2.24 mol/L solution.

$$V_i = 80.0 \text{ mL}$$

$$C_i = 2.24 \text{ mol/L}$$

$$V_f = 320. \text{ mL}$$

$$C_f = ?$$

$$V_i C_i = V_f C_f$$

$$(80.0 \text{ mL})(2.24 \text{ mol/L}) = (320. \text{ mL}) C_f$$

$$C_f = \frac{(80.0 \text{ mL})(2.24 \text{ mol/L})}{(320. \text{ mL})}$$

$$C_f = 0.560 \text{ mol/L}$$