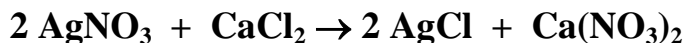


**Chemistry 101 – Unit 9**  
**Practice Problems**

1. 161 grams of  $\text{Na}_2\text{CO}_3$  are dissolved in enough water to make 4.6 L of solution.
  - a. What is a solution?
  - b. What is the solute in this example?
  - c. What is the solvent in the example?
  - d. How many moles of  $\text{Na}_2\text{CO}_3$  are being dissolved in this example?
  - e. What is the molarity (M) of the solution prepared in this example?
  
  - f. If 225 mL of this example solution are poured into a flask, how many moles of  $\text{Na}_2\text{CO}_3$  have been put into the flask?
  
2.
  - a. How many grams of  $\text{CaCl}_2$  must be added to water to make 200. mL of a solution that is 0.875 M  $\text{CaCl}_2$  ?
  
  - b. What is the solvent in this example?
  - c. What is the solute in this example?
  
  - d. How many moles of  $\text{CaCl}_2$  would be in 68.9 mL of the 0.875 M solution?

3. What volume, in mL, of 0.4050 M calcium chloride reacts completely with 25.00 mL of 0.2800 M silver nitrate?



Given:

Wanted:

Path:

Factors:

4. For  $2 \text{AgNO}_3 + \text{MgBr}_2 \rightarrow 2 \text{AgBr(s)} + \text{Mg(NO}_3)_2$

a. How many grams of AgBr can be prepared when 58.0 mL of 0.264 M AgNO<sub>3</sub> react with excess MgBr<sub>2</sub>?

b. How many mL of 0.833 M AgNO<sub>3</sub> are required to react with 73.1 mL of 0.552 M MgBr<sub>2</sub>?

c. If 205 mL of a MgBr<sub>2</sub> solution react completely with 42.95 mL of 0.439 M AgNO<sub>3</sub> solution, what must be the molarity of the MgBr<sub>2</sub> solution?