

1) CaCl_2

$$\left(\frac{15.00 \text{ g CaCl}_2}{1} \right) \left(\frac{1 \text{ mole CaCl}_2}{111.1 \text{ g CaCl}_2} \right) = .1350 \text{ mole CaCl}_2$$

$$\left(\frac{.1350 \text{ mole CaCl}_2}{1} \right) \left(\frac{1}{.200 \text{ L}} \right) = .675 \text{ M CaCl}_2$$

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

$$\left(\frac{1.00 \text{ mole Fe}(\text{NO}_3)_3}{1 \text{ L}} \right) \left(\frac{1 \text{ L}}{1} \right) = 1.00 \text{ mole Fe}(\text{NO}_3)_3$$

$$\left(\frac{1.00 \text{ mole Fe}(\text{NO}_3)_3}{1} \right) \left(\frac{241.9 \text{ g Fe}(\text{NO}_3)_3}{1 \text{ mole Fe}(\text{NO}_3)_3} \right) = 242 \text{ g Fe}(\text{NO}_3)_3$$

3) Na_2CO_3

$$\left(\frac{.035 \text{ moles Na}_2\text{CO}_3}{1} \right) \left(\frac{106.0 \text{ g Na}_2\text{CO}_3}{1 \text{ mole Na}_2\text{CO}_3} \right) = 3.7 \text{ g Na}_2\text{CO}_3$$

$$\left(\frac{.035 \text{ moles Na}_2\text{CO}_3}{1} \right) \left(\frac{1 \text{ L}}{1.50 \text{ moles Na}_2\text{CO}_3} \right) = .023 \text{ L}$$

4) MgSO_4

$$\left(\frac{.024 \text{ moles MgSO}_4}{1 \text{ L}} \right) \left(\frac{.300 \text{ L}}{1} \right) = .0072 \text{ moles MgSO}_4$$

$$\left(\frac{.0072 \text{ moles MgSO}_4}{1} \right) \left(\frac{120.4 \text{ g MgSO}_4}{1 \text{ mole MgSO}_4} \right) = .87 \text{ g MgSO}_4$$

$$5) \left(\frac{.25 \text{ moles Na}_2\text{SO}_4}{1 \text{ L}} \right) \left(\frac{1.50 \text{ L}}{1} \right) \left(\frac{142.1 \text{ g Na}_2\text{SO}_4}{1 \text{ mole Na}_2\text{SO}_4} \right) = 53 \text{ g Na}_2\text{SO}_4$$

Place 53g Na₂SO₄ in some water. Then fill the Beaker to the 1.50L mark.

$$6) \left(\frac{1.55 \text{ moles (NH}_4)_2\text{CO}_3}{1 \text{ L}} \right) \left(\frac{3.50 \text{ L}}{1} \right) \left(\frac{96.0 \text{ g (NH}_4)_2\text{CO}_3}{1 \text{ mole (NH}_4)_2\text{CO}_3} \right) = 521 \text{ g (NH}_4)_2\text{CO}_3$$

$$7) \left(\frac{.25 \text{ CaCO}_3}{1 \text{ L}} \right) \left(\frac{2.50 \text{ L}}{1} \right) \left(\frac{100.1 \text{ g CaCO}_3}{1 \text{ mole CaCO}_3} \right) = 63 \text{ g CaCO}_3$$

$$8) \left(\frac{.75 \text{ mole ZnSO}_4}{1 \text{ L}} \right) \left(\frac{4.33 \text{ L}}{1} \right) = 3.2 \text{ moles ZnSO}_4$$

$$9) \left(\frac{.55 \text{ moles AgNO}_3}{1 \text{ L}} \right) \left(\frac{2.00 \text{ L}}{1} \right) \left(\frac{6.02 \times 10^{23} \text{ FU AgNO}_3}{1 \text{ mole AgNO}_3} \right) = 6.6 \times 10^{23} \text{ FU AgNO}_3$$

$$10) \left(\frac{1.25 \text{ moles NH}_4\text{Cl}}{1 \text{ L}} \right) \left(\frac{.200 \text{ L}}{1} \right) \left(\frac{53.5 \text{ g NH}_4\text{Cl}}{1 \text{ mole NH}_4\text{Cl}} \right) = 13.4 \text{ g NH}_4\text{Cl}$$

Fill a beaker with 100 ml of water, place in 13.4g NH₄Cl into it and then fill the Beaker to the 200ml mark.