

1. Write the symbol and charge for the following ions:

(a) magnesium

\_\_\_\_\_

(c) potassium

\_\_\_\_\_

(b) chloride

\_\_\_\_\_

(d) oxide

\_\_\_\_\_

2. Write the following as formulae and indicate whether or not each will be soluble, partially soluble, or insoluble in water.

(a) calcium fluoride

\_\_\_\_\_

(d) barium sulfate

\_\_\_\_\_

(b) lead (IV) nitrate

\_\_\_\_\_

(e) mercury (II) hydroxide

\_\_\_\_\_

(c) gold iodide

\_\_\_\_\_

(f) silver sulfide

\_\_\_\_\_

3. An unknown ionic substance forms a precipitate with hydroxide and sulfate but not with chromate. Deduce the cation(s) it is most likely to be, and give reasons.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. For each reaction, write:

(i) A chemical equation

(ii) An ionic equation

(iii) A balanced net ionic equation

(a) sodium carbonate solution plus calcium iodide solution

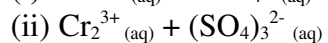
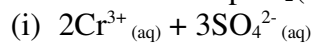
\_\_\_\_\_  
\_\_\_\_\_  
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(b) silver nitrate solution plus ammonium phosphate solution

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## BONUS QUESTIONS

A) When we break up  $\text{Cr}_2(\text{SO}_4)_3$  into its ions, do we write it like (i) or like (ii)?



Explain why.

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B) Explain how the *process* of NaCl dissolving in water is different to HCl dissolving in water.

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