Testing for ions – ppt Equations AS 91911: C2.2 Investigating ions in a solution

ion	Procedures and Obs.	ppt equations
Cl^-	Add $AgNO_3$ solution • Precipitate forms	1. *What ion in the $AgNO_3$* solution reacts with the Cl^-? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s)
I^-	Add $AgNO_3$ solution • Precipitate forms	1. *What ion in the $AgNO_3$* solution reacts with the I^-? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s)
Ag^+	Add 2 drops dilute NaOH solution • forms a brown precipitate *To confirm (new sample)* Add NH_3 solution • forms a brown precipitate	1. *What ion in the NaOH* solution reacts with the Ag^+? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s) 5. *What ion in the NH_3* solution reacts with the Ag^+? Remember $NH_3 + H_2O \rightarrow NH_4^+ + OH^-$ 6. Is this the same ppt reaction as above?

Al^{3+}	Add 2 drops dilute NaOH solution • forms a white precipitate *To confirm (new sample)* Add NH_3 solution • forms a white precipitate	1. *What ion in the NaOH* solution reacts with the Al^{3+}? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s) 5. *What ion in the NH_3* solution reacts with the Al^{3+}? Remember $NH_3 + H_2O \rightarrow NH_4^+ + OH^-$ 6. Is this the same ppt reaction as above?
Cu^{2+}	Add 2 drops dilute NaOH solution • forms a blue precipitate *To confirm (new sample)* Add NH_3 solution • forms a blue precipitate	1. *What ion in the NaOH* solution reacts with the Cu^{2+}? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s) 5. *What ion in the NH_3* solution reacts with the Cu^{2+}? Remember $NH_3 + H_2O \rightarrow NH_4^+ + OH^-$ 6. Is this the same ppt reaction as above?
Fe^{3+}	Add 2 drops dilute NaOH solution • forms a brown/orange precipitate	1. *What ion in the NaOH* solution reacts with the Fe^{3+}? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s)

Pb^{2+}	Add 2 drops dilute NaOH solution • forms a white precipitate *New sample* Add 2 drops NH_3 solution • forms a white precipitate *New sample.* Add dilute H_2SO_4 solution	1. *What ion in the NaOH* solution reacts with the Pb^{2+}? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s) 5. *What ion in the NH_3* solution reacts with the Pb^{2+}? Remember $NH_3 + H_2O \rightarrow NH_4^+ + OH^-$ 6. Is this the same ppt reaction as above? 7. *What ion in the H_2SO_4* solution reacts with the Pb^{2+}? 8. What compound is formed? 9. What solubility rule(s) are used to justify the ppt? 10. Write the equation for the formation of this ppt. Include subscripts (aq) + (s)
Zn^{2+}	Add 2 drops dilute NaOH solution • forms a white precipitate *New sample* Add 2 drops, NH_3 solution • forms a white precipitate	1. *What ion in the NaOH* solution reacts with the Zn^{2+}? 2. What compound is formed? 3. What solubility rule(s) are used to justify the ppt? 4. Write the equation for the formation of this ppt. Include subscripts (aq) + (s) 5. *What ion in the NH_3* solution reacts with the Zn^{2+}? Remember $NH_3 + H_2O \rightarrow NH_4^+ + OH^-$ 6. Is this the same ppt reaction as above?