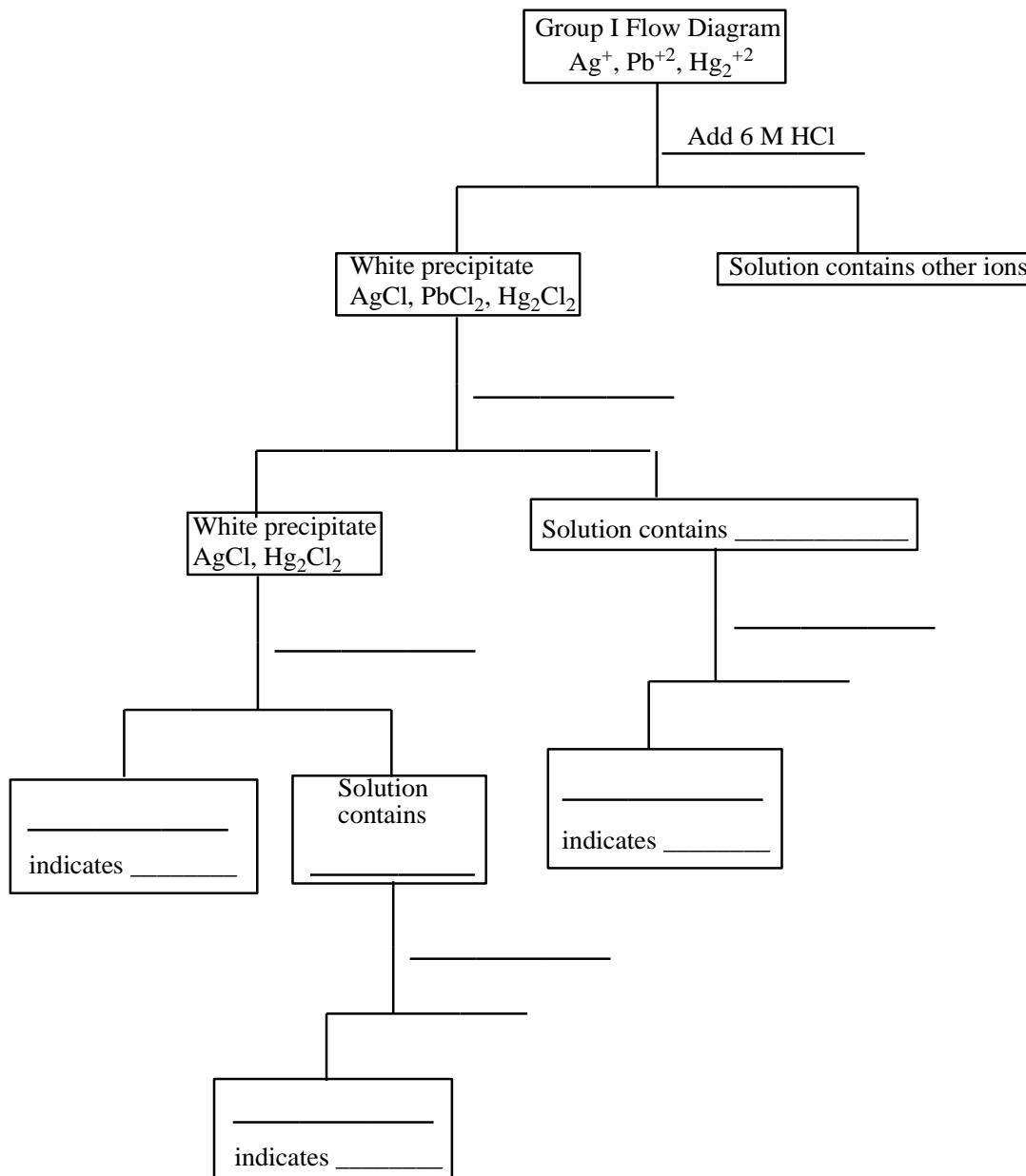


It is possible to summarize the directions for analysis of the Group I cations in what is called a flow diagram. In the diagram, vertical lines link successive steps in the procedure. Reactant cations or reactant substances containing the ions are at the top end of each line and products formed are at the bottom end. On the product end, a horizontal line separates the solid products on the left and the solution products on the right. Reagents and conditions used to carry out each step are placed alongside the lines. A partially completed flow diagram for the Group I ions follows:



Use this diagram as a brief guide to the procedure. Complete the flow diagram above by directly recording your observations on your known (in the boxes) and unknown (beside the boxes), perhaps using different colored markers.

Name: _____

Section: _____

Experiment Results:

UNKNOWN NUMBER _____ IONS PRESENT _____

Post-Lab Questions: Group I Cations

1. A solution may contain Ag^+ , Pb^{2+} , and Hg_2^{2+} . A white precipitate forms on addition of 6 M HCl. The precipitate is partially soluble in hot water. The solid remaining after treatment with hot water turns black on addition of 6 M NH_3 . Which of the ions are present, which are absent, and which remain undetermined? State your reasoning below. NOTE: simply listing ions below without the appropriate reasoning will NOT earn you any credit!

Present _____

Absent _____

In Doubt _____