

Name: \_\_\_\_\_  
Partner: \_\_\_\_\_  
Date: \_\_\_\_\_

Block:

## Lab 16E Part I: Identifying Ions

**Purpose:** \_\_\_\_\_

(1 pt)

**Materials:** Refer to Heath Chemistry Laboratory Experiments p. 180

**Procedure:** Refer to Health Chemistry Laboratory Experiments p. 180, Part I (1 pt)

*Note any modifications:*

**Data and observations:** Describe the formation of any precipitates, including its *colour*, *how long it took to form* (fast vs. slow), and whether it was *heavy or light*. (11 pts)

Table 1: \_\_\_\_\_

	0.1 M Solutions of Group 2 Cations (as Nitrates)				
Reagents	Mg <sup>2+</sup>	Ca <sup>2+</sup>	Sr <sup>2+</sup>	Ba <sup>2+</sup>	Unknown # _____
0.02M K <sub>2</sub> CrO <sub>4</sub>					
0.1M (NH <sub>4</sub> ) <sub>2</sub> C <sub>2</sub> O <sub>4</sub>					
0.1M Na <sub>2</sub> SO <sub>4</sub>					
0.1M NaOH					

**Analysis:**

1. Write net ionic equations for each combination in which a precipitate occurred. (4pts)
  
  
  
  
  
  
  
  
  
  
  
2. State the identify of your unknown (with its sample number). Give the reasoning you used to arrive at this conclusion. (3 pts)

**Post-lab questions:**

1. Assume  $Mg^{2+}$ ,  $Ca^{2+}$ , and  $Sr^{2+}$  are in solution together. Devise a general procedure to extract each of these cations out of solution using the same reagents used in the lab. Note: order and reagent are important. (3 pts)
  
  
  
  
  
  
  
  
  
  
  
2. Why are the reagents used to test for cations usually alkali metal salts or ammonium salts rather than salts of other metals? (1 pt)
  
  
  
  
  
  
  
  
  
  
  
3. Why are the reagents used to test for anions usually a nitrate of the cation that is reacting rather than other salts of that cation? (1 pt)