Name _____Date _____Period_____

5:21 Determining Chemical Formulas Lab

Abstract: Naming and writing chemical formulas is a critical part of chemistry. It is the beginning recipe that is essential in writing chemical equations. Knowledge of the symbols and common charges is all that is needed to help write formulas. *Adapted from Calhoun Scientific 1993.

Purpose:
Learn how to write chemical formulas.

Materials (for every two or three students):

- Handout of cations and anions.
- Scissors

Procedure:

1. Examine Table I and become acquainted with the cations and anions used in this lab.
2. Cut out each of the anion and cation pieces.
3. For each formula name, piece together the cations and anions in such a way that a rectangle is formed.
4. Use this tool to write down the formula in Table II.

Table I			
Cations		Anions	
Name	Symbol	Name	Symbol
Sodium	Na^{+1}	Oxide	O^{-2}
Ammonia	NH_4^{+1}	Sulfide	S^{-2}
Potassium	K^{+1}	Sulfate	SO_4^{-2}
Iron (II)	Fe^{+2}	Phosphate	PO_4^{-3}
Magnesium	Mg^{+2}	Nitrate	NO_3^{-1}
Aluminum	Al^{+3}	Chloride	Cl^{-1}
Iron(III)	Fe^{+3}	Bromide	Br^{-1}
Copper (II)	Cu^{+2}	Fluoride	F^{-1}
Calcium	Ca^{+2}		
Lithium	Li^{+1}		

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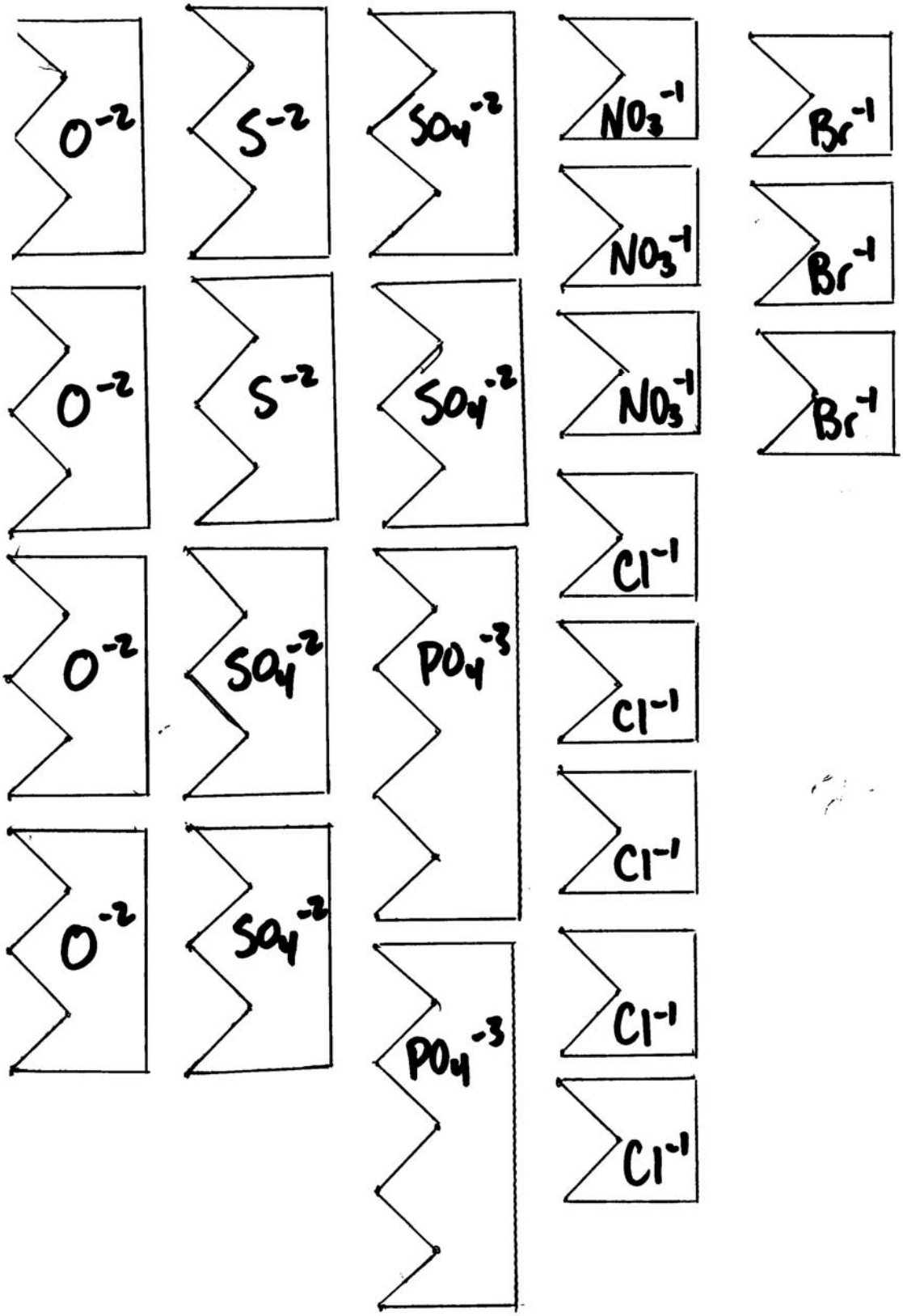
Anions



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Cations

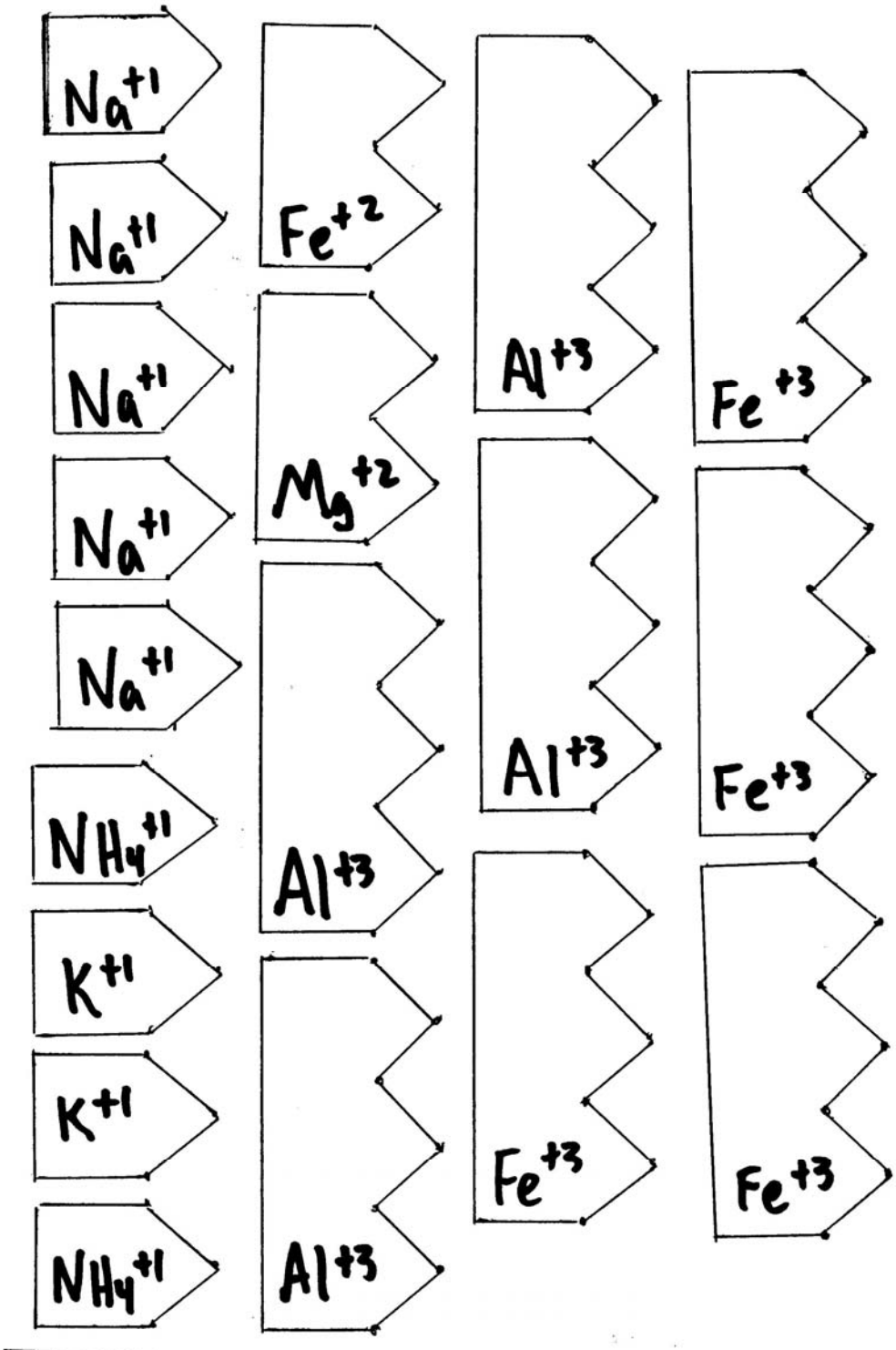

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Table 2			
Cation	Anion	Name	Formula
Na^{+1}	O^{-2}		
Na^{+1}	S^{-2}		
NH_4^{+1}	SO_4^{-2}		
NH_4^{+1}	PO_4^{-3}		
K^{+1}	NO_3^{-1}		
K^{+1}	Cl^{-1}		
Fe^{+2}	Br^{-1}		
Fe^{+2}	Cl^{-1}		
Fe^{+2}	O^{-2}		
Mg^{+2}	S^{-2}		
Mg^{+2}	SO_4^{-2}		
Al^{+3}	SO_4^{-2}		
Al^{+3}	NO_3^{-1}		
Fe^{+3}	Cl^{-1}		

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Table 2			
Cation	Anion	Name	Formula
Fe^{+3}	S^{-2}		
Cu^{+2}	SO_4^{-2}		
Ca^{+2}	PO_4^{-3}		
Li^{+1}	F^{-1}		

Questions:

1. How are single elements that are anions name?

_____

2. What is always placed around a polyatomic ion in a compound if there is more than one?

_____

_____

3. Which ion comes first and then second when writing a formula?

_____

_____