

# Noteset 4D (Part 2) - In Class Noteset

## Determining Ion Charges

### Single Replacement Reactions w/Polyatomic Ions

#### Determining Cation Charges



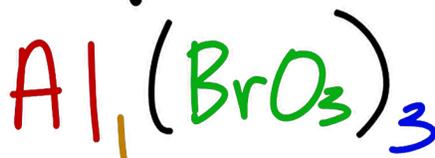
3A Poly. Ion

+3 -1

$$aA + bB = 0$$

a, b = subscripts

A, B = charges



$$aA + bB = 0$$
$$-bB \quad -bB$$

$$aA = -bB$$

$$1 \cdot +3 = -3 \cdot -1$$

$$+3 = +3$$



Na (IA): +1

PO<sub>4</sub>: -1

(check chart)

All anions (-)  
have a fixed  
charge!

#### Ionic Charge Formula

##### Transition Metals Charges

$$aA + bB = 0$$
$$-bB \quad -bB$$

$$\frac{aA}{a} = -\frac{bB}{a}$$

$$A = -\frac{bB}{a}$$

(cation charge)



A B

Cu SO<sub>4</sub>

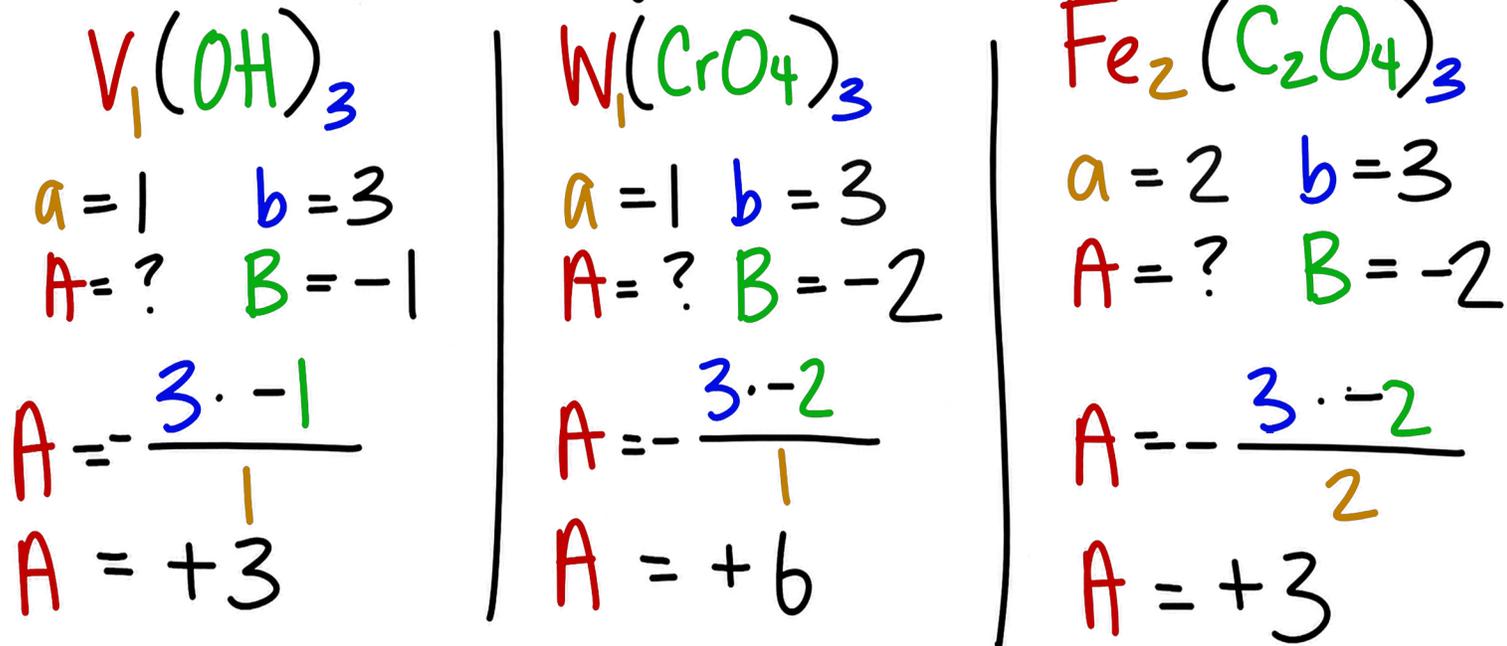
+A -2 (chart)

use whole  
poly ion!

$$A = -\frac{1 \cdot -2}{1} = +2$$

$$A = +2 (Cu)$$

## Determining Ion Charges



## Single Replacement w/ Polyatomic Ions

