Name	
Date	Hour

- 1. Elemental iron is ferromagnetic, yet an iron nail does not attract iron fillings.
 - a. Explain.

b. If, however, a magnet is rubbed over the surface of a nail, the nail will attract iron fillings. Why?

2. Analysis of a compound shows it to be potassium, 49.4%; sulfur, 20.2%; and oxygen, 30.4%. What is its empirical formula?

3. Consider the layered structures below and determine the total number of each type of atom belonging to the unit cell and empirical formulas for the compound.

Layer 5

Potassium	Sites in the Cell	Atoms in the Unit		
Atoms		Cell From that Site		
	Corners			
	Edges			
	Faces			
	Inside			
	Total in Cell			

Platinum	Sites in the Unit Cell	Atoms in the Unit		
Atoms		Cell From that Site		
	Corners			
	Edges			
	Faces			
	Inside			
	Total in Cell			

Chloride	Sites in the Unit Cell	Atoms in the Unit	
Atoms		Cell From that Site	
	Corners	11/7/1/0)	
(Edges	TUULATA	
	Faces		
	Inside		
	Total in Cell		

Use the data from the tables above.

a.	What i	is the total	number of	each type	of atom ir	n the unit cell?	K;
	D _f	· C1					

- b. What is the empirical formula for this compound?
- 4. Determine the mole ratios from the balanced equation below.

$$3\;CuO + 2\;NH_3 \qquad \quad 3\;Cu + \;\;N_2 + 3\;H_2O$$

 $CuO:Cu \\ NH_3:CuO \\ N_2:NH_3 \\ Cu:H_2O$

5. Compare the solids VO and V_2O_5 in their attraction to a magnetic field.