Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give the overall shape for each molecule and the hybridization state of each atom in the molecule:

a.CO2

b. SO32-

c. ICl3

2. Name the following coordination compound and give the charge of the central ion:

a. [Pt(OH)2(NH3)2]

b. K4[Fe(CN)6]

c. [Cr(OH2)5Cl]Cl2 \* H2O

d. [Co(NH3)4Br]+2

3. Write the formula and give the coordination number and possible shapes for the coordination compound given the name

1. diamminedichloroplatinum(II)
2. hexaamminecobalt(II) chloride
3. iodoaquabis(ethylenediamine)cobalt(III) nitrate

4. Draw a picture of a pi bond from 2 p orbitals. Where would there be no electron density? Can the bond rotate along the axis?

5. Is pH 3 acidic or basic? Is pH 10 acidic or basic?

6. In equal concentrations, why do weak acids result in higher pH levels when compared to strong acids?

7. Determine which acid is stronger and explain the reason.

HCl or HBr

HClO vs HClO2

HNO3 or HNO2

8a. If you had .1 M HCl and put it in water, what would [H+] be? Why would it be this?

8b. What would the pH be?