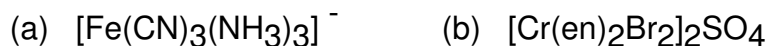
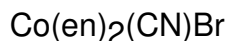


Review Questions -- Chapter 25

1. For each of the following metal complexes, give the **oxidation state** of the metal and the **complete, systematic name** of the compound or ion.



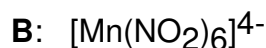
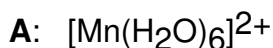
2. Draw **clear, 3-dimensional structures** of all of the isomers, geometric and/or optical, of the following complex. Points will be deducted if the same structure is drawn more than once.



3. When an excess of ammonia (NH_3) is added to aqueous solutions of each of the following metal ions, complexes having various coordination numbers and/or structures are produced. Write the **formula** for each metal- NH_3 complex and clearly draw its **3-dimensional structure**.



4. For each of the following complexes, **A** and **B**, sketch a **properly-labeled d-orbital splitting diagram**. Then answer the questions below in a manner consistent with your diagrams.



- (a) How many unpaired electrons does complex **A** have?
- (b) Which complex, **A** or **B**, will absorb light of longer wavelength?