1. Book problems:
   
   p. 53  3b, 5, 10  
   p. 59  1b, 1d, 3, 7, 8c  

2. Describe the mapping $w = f(z) = 1/z$, from the extended $z$-plane to the extended $w$-plane.  

3. Show that a circle in the complex $z$-plane corresponds to a circle on the Riemann sphere.  
   
   Hint: Use the fact that a circle on the sphere is given by the intersection of a plane and the sphere.