1. Problem numbers 3, 9, and 12 on page 94 of your text.
2. Problem number 34 on page 96 of your text.
3. Consider the subgroup \( A = \{id, D_L\} \).
   (a) Find all left cosets of \( A \) in \( D_4 \).
   (b) Find all right cosets of \( A \) in \( D_4 \).
   (c) Are the left and right cosets the same?
4. Show that if \( g \in G \) a group, and \( |G| = n \) then \( g^n = e \) where \( e \) is the identity for \( G \).
5. Problem number 41 on page 103 of your text.
6. Prove that if \( G \) is a group of permutations of a set \( A \) and \( n \in A \), then \( \text{Stab}_G(n) \leq G \).
7. Let \( G = \{id, (26), (135), (26)(135), (153), (26)(153)\} \leq S_6 \)
   (a) Find the stabilizer of each \( n \in \{1, 2, 3, 4, 5, 6\} \).
   (b) Find the orbit of each \( n \in \{1, 2, 3, 4, 5, 6\} \).