1. For each figure described below, USE CYCLE NOTATION to list the rotations in its group of isometries; count the identity as a rotation. Then list the reflections (keep your lists separate). For non-regular polygons, I have specified the required numbering of the vertices.

(a) A regular pentagon
(b) A regular octagon
(c) An isosceles triangle whose apex is vertex #1
(d) This rectangle:  
(e) This parallelogram:  
(f) This hexagon:

2. Number the vertices of a regular heptagon (7 sides) in clockwise order. Name its rotational isometries $R_1$ for rotating 1 “notch” clockwise, $R_2$ for rotating 2 “notches,” etc., and use 0 to represent the identity. Name its reflectional isometries $L_1$ for reflecting through the line passing through Vertex #1, $L_2$ for reflecting through the line passing through Vertex #2, and so on.

(a) Write the cycle notation for each of these isometries.
(b) Complete a Cayley table for $D_7$, using the NAMES (not cycle notation) I have given above.

3. Solve these problems from the text:

- 10.1-10.3
- 10.5-10.8
- 10.11 and 10.12
- depending upon Weds. 10/15/14 content, also 11.1-11.6