Math 331 – Homework Assignment for April 24, 2002

Reading in the Text

§ 10.7

Exercises

1. Given three non-parallel lines a, b, and c in the plane that intersect in a single common point P, construct a line l so that the product of the reflections in the three given lines is the reflection in l, i.e.,
$$\sigma_c \circ \sigma_b \circ \sigma_a \quad = \quad \sigma_l \quad .$$

2. Let ρ be the rotation of the plane about the point P through the angle θ and τ the translation of the plane by the vector V. Relative to the given objects P, V, and θ, provide a geometric description of:
   (a) $\rho\tau\rho^{-1}$.
   (b) $\tau\rho\tau^{-1}$.

3. A rotation of the plane is determined by specifying a point as its center and an angle. Relative to that method of description explain how the composition of two given rotations about different centers may be constructed.