

MODERN ALGEBRA 1: HOMEWORK 8

- (1) Chapter 6: 7.1
- (2) Chapter 6: 7.2 (Take the line to be the X -axis for concreteness.)
- (3) Chapter 6: 8.1
- (4) Chapter 6: 9.3 (Feel free to look at a picture of a dodecahedron.)
- (5) Chapter 6: 9.6 (A tennis ball also has the same kind of seam. Feel free to work with an actual baseball or tennis ball. You will find some in the math help room.)
- (6) Let \mathbf{R}^\times act on \mathbf{R}^2 by $t * (a, b) = (ta, t^{-1}b)$. Describe the orbits of this action. Which points have non-trivial stabilizers?