

Hints 7-8

- 7.2. Use an affine transformation to simplify the question.
- 7.3. Apply an affine transformation to map three vertices of the pentagon to the vertices of the regular pentagon. Use the fact that affine maps preserve parallelism to conclude about the images of the other points. (You will probably also need some continuity argument).
- 7.4. Apply the sine law to three different triangles you can find in the picture.
- 8.3. If it is not clear how to find the cross-ratio of points on the line at infinity, we could first send the line at infinity to any other nicer line.
Another option would be to recall that the cross-ratio of points in \mathbb{RP}^2 is the cross-ratio of the corresponding lines in \mathbb{R}^3 .