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Moduli Spaces of Polygons and Punctured Riemann Spheres

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Abstract. The purpose of this note is to give a simple combinatorial construction of the map from the canonically compactified moduli spaces of punctured complex projective lines to the moduli spaces $\mathcal{P}_r$ of polygons with fixed side lengths in the Euclidean space $\mathbb{E}^3$. The advantage of this construction is that one can obtain a complete set of linear relations among the cycles that generate homology of $\mathcal{P}_r$. We also classify moduli spaces of pentagons.

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