

The thesis deals with three main topics – isometric, similar, and affine transformations of the plane from the point of view of analytic geometry. In the first chapter, the most basic concepts are recalled, which will be subsequently dealt with throughout the thesis. The second chapter focuses on identical transformations. Here, we find an analytic representation of this transformation in matrix and complex forms. The third chapter focuses on similar transformations. The central point is then the decomposition of similarity into identity and identicalness, where knowledge of both similarities and identities are combined. The last chapter focuses on affinities. This chapter is not so theoretical anymore but focuses mainly on the characteristic elements of affine transformations and examples. This work's important and beneficial factor is the solved examples, supplemented by several figures. The work is intended primarily for mathematics students as a study material. However, it may also be used by secondary school teachers to supplement the secondary school curriculum.