

The present thesis consists of four research papers. Each article deals with quantifications of certain properties of Banach spaces. The first paper is devoted to the Grothendieck property. The main result is that the space ℓ^∞ enjoys its quantitative version. The second paper investigates quantifications of the Banach-Saks and the weak Banach-Saks property. The relationship of compact, weakly compact, Banach-Saks, and weak Banach-Saks sets is quantified, as well as some characterizations of weak Banach-Saks sets. In the third article we discuss possible quantifications of Pełczyński's property (V), their characterizations and relations to quantitative versions of other properties of Banach spaces. The last paper is a continuation of the third one. We prove that C^* -algebras have a quantitative version of the property (V), which generalizes one of the results obtained in the previous paper. Moreover, we establish a relationship between quantitative versions of the property (V) and the Grothendieck property in dual Banach spaces.