The objective of this study was to examine the effect of hand-held calculators on mathematical achievement of Albanian high school students. In May 2012, 484 tenth-grade students from five large high schools in the city of Durres (Albania) participated in the study. The data collection instrument consisted of the same mathematics achievement test. Test items involved simple computations, which did not necessitate the use of calculators. The sample included two groups. The first group consisted of 290 students. These were not calculator users, and therefore did not use calculators on the test. The second group consisted of 194 students. Since these were calculator users, they were allowed to use calculators on the test. Regarding the overall achievement, results indicate that the group of calculator users, scored significantly higher than the group of non-calculator students. The results of t-test procedures also showed that the first group scored significantly higher than the second group in the three cognitive domains of understanding, namely, in the knowing, applying and reasoning domain. Lastly, presence of calculators on the test seemed to encourage students to use algebra for solving word problems. (Received September 17, 2013)