ABSTRACT

This bachelor´s work is determined to professional and lay public which is interested in widening its knowledge of goniometric functions and primarily in the examples of its applications. The target of this work is to demonstrate the potential of applications of goniometric functions in various fields of science in which their appearance is characteristic. The beginning to the work is dedicated to introduction of goniometric functions at secondary school level. Then, important basic theorems are formulated which are connected to the theme of this work (sine theorem, cosine theorem, sum formulas). Without knowledge of these formulas, it is impossible to perform non-elementary calculations, therefore the formulas are always given with proof. The examples of applications of goniometric functions have an overlap in areas beyond mathematics, therefore one part of each topic is short introduction. However, the core part of the tasks is focused on goniometric functions. Greater space is devoted to numerical procedures and to properties if goniometric functions. In theoretical part, only basic terms and definitions are mentioned which are necessary to practical part. The examples chosen are for most of topics typical. As a rule, single examples of applications of goniometric functions are not related to each other, therefore this bachelor´s work is divided into several separate chapters. Procedures of calculating more complex examples are briefly suggested (for example if determining of primitive function is required). The topics of the chapters are various with regard character of this work. At the same time, possibilities of making use of goniometric functions are much wider by each topic. However, they cannot be listed in full in bachelor´s work. Focus of the chapters and examples is made so that intelligibility is better. The ability of making algebraic adjustments to expressions is expected. In this work, such calculations are just indicated.