

Title: Calculation of Values of Trigonometric Functions

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Abstract: This bachelor thesis deals with various calculation methods of how to calculate values of trigonometric functions (sine and tangent chiefly). These methods either were used in the past times or are still used nowadays. However, in this thesis, these methods are explained in a modern way in order to be easily understandable by such readers who have basic knowledge of calculus. In each chapter, there is only one method discussed. At first, lengths of chords are calculated and a table of them is constructed, based on Ptolemy's and Copernicus' methods. Then, al-Kashi's approximation method is interpreted elaborately. Furthermore, Newton's method of development of Taylor series for the sine function is explained in detail. Last but not least the CORDIC algorithm is discussed. In order to provide a better understanding, there are particular values calculated in each chapter.

Keywords: Almagest, CORDIC, Taylor series