



## AGAIN ABOUT TRIGONOMETRIC FUNCTIONS AND HYPERBOLIC FUNCTIONS OF COMPLEX ARGUMENT

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**Abstract.** After defining hyperbolic functions in five previous papers and presenting and proving their 184 properties, in a recent paper we extended these functions from the set of real numbers -  $\mathbf{R}$  to the set of complex numbers -  $\mathbf{C}$ . Thus, we defined the set  $\mathbf{C}$  of complex numbers, all known hyperbolic functions: sh - hyperbolic sine, ch - hyperbolic cosine, th - hyperbolic tangent, cth - hyperbolic cotangent, sch - hyperbolic secant and csh - hyperbolic cosecant, also the inverses of these functions. But, to do this, we extended from  $\mathbf{R}$  to  $\mathbf{C}$  the known functions: ex - exponential, lnx - logarithmic, but also the trigonometric ones: sin - sine, cos - cosine, tg - tangent, ctg - cotangent, sec - secant and cosec - cosecant, as well as their inverses. We then presented 18 immediate properties of these functions, properties divided into two groups: A) The periodicity of hyperbolic functions of complex argument and B) The values of hyperbolic functions and trigonometric functions of imaginary argument. In this paper we will continue with the presentation of 36 other properties of these functions, also divided into two groups: C) The values of the hyperbolic functions of complex argument, their conjugates and modules and D) The values of the trigonometric functions of complex argument, their conjugates and modules.

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