Monotonicity, convexity and inequalities related to complete (p, q, r)-elliptic integrals and generalized trigonometric functions

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Abstract. In the paper, making use of the monotonicity theorem for the ratio of two power series, the Čebyšev integral inequality for monotonic functions and the Hermite–Hadamard integral inequality for convex functions, the authors establish monotonicity, logarithmic and geometric convexity and concavity, logarithmic and identric mean inequalities, the Turán-type inequalities, and complete monotonicity of several functions involving complete (p, q, r)-elliptic integrals and generalized arcsine and arctangent functions.

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