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# Poly-Cauchy polynomials

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**Abstract**

We introduce the poly-Cauchy polynomials which generalize the classical Cauchy polynomials, and investigate their arithmetical and combinatorial properties. These polynomials are considered as analogues of the poly-Bernoulli polynomials that generalize the classical Bernoulli polynomials. Moreover, we investigate the zeta functions which interpolate the poly-Cauchy polynomials. The values of these functions at positive integers can be expressed by using the polylogarithm function or the truncated multiple zeta star values.

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